Industrial Equipment News

FOUNDED 1933

ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as IEN - 4659

TESTING . . Viscosity meter for continuous indication and control

Source: RICH-ROTH LABORATORIES
671-5 Connecticut Blvd., East Hartford 8, Conn.

No stops to sample

Ultra-Visceson is a new viscosity meter that generates and applies ultrasonic waves to a probe mounted in the liquid. Then it employs the probe reaction to provide a meter reading and to actuate indicating, recording or control equipment. The frequency measurement established by the probe results in a reading that represents the product of viscosity and density in centipoises multiplied by grams per cc., for Newtonian liquids, or apparent viscosity multiplied by density for non-Newtonian liquids. The measurement is made in milliseconds so the readings are instantaneous in relation to processing conditions and continuous control can be established over the process.

Application can be made in containers, processing equipment, pipe lines, test tubes in either permanent or temporary arrangement for Newtonian liquids such as lubricating oils, syrups, unbodied varnishes, vegetable oils, various food products. Non-Newtonian liquids are represented by starch slurries, chocolate, paint, liquid adhesives, blood, printing ink, putties in the forms of colloids, emulsions, suspensions. A standard probe is employed at pressures ranging from vacuum to 500 lb. per square inch.

The probe is hermetically sealed and about the size of a fountain pen. The electronic equipment, the meter and control connections are enclosed in a rectangular housing that can be mounted at distances to a mile from the probe. Four decade ranges can be set up, maximum at 50 to 50,000 centipoises. The instrument can be employed for continuous duty in a temperature range between minus 100 and plus 650 deg. F. Operation is on 110-volt 60-cycle ac. Amount of liquid required to make a test is minimum at 4 cubic centimeters.

If you write maker identify as IEN - 4660

CONTAINER . . Shatterproof carboy made of flexible polyethylene plastic

Source: PLAX CORP.
P. O. Box 1019-A, Hartford 1, Conn.

Somewhat aggravated testing

Safe, storage and protection in transit are provided for corrosive liquids by this new 13-gal. plastic bottle. It is being manufactured for Greif Brothers Cooperage Corporation. The first user is to be General Chemical Division of Allied Chemical and Dye Corp. to ship hydrofluoric acid which will eat glass. The new container extends the Plax line to cover a range starting at units rating ⅝ ounce.

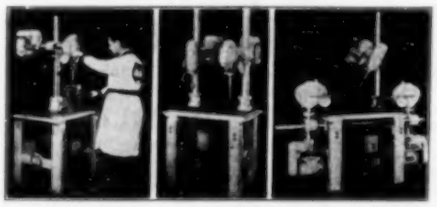
The plastic remains flexible in sub-zero temperatures. It weighs 29 lb. for the 13-gal. unit. It is chemically inert to most acids. Its outer shell, for the carboy service, is an exterior-grade plywood jacket. The inner surface of the jacket is treated with micro-crystalline wax. The outer surface, including the metal parts, is coated with an acid-resistant plastic to protect against spillage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN - 4661

DRILLING . . Universal machine and assembly of standard components

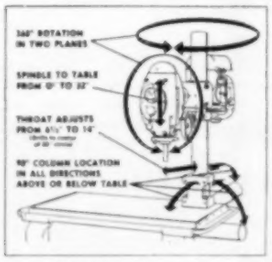
Source: MAGNA ENGINEERING CORP.
352 Chambers St., Menlo Park, Calif.



Single spindle assembly is $480 without the motor

A motor-driven head and swivel support brackets, a removable power-feed gear box, a tubular support column and base casting, a cast-iron table and a cast-iron support leg, comprise the basic elements of this new MagnaDrill. These elements assemble to provide a complete machine that mounts one or any number of spindles in any required relation with the table. It also is available as a single unit with two support legs or as any required multiple of single units.

The head takes a 1-hp. motor with four-step sheave connection to a vertical countershaft. Cam adjustment on the motor support positions the motor sheave for a maximum of seven speed positions. The countershaft drives a Gilmer toothed belt located inside the 3½-in. head tube to the spindle at the front. Countershaft and spindle are mounted on factory-lubricated permanently-sealed ball bearings. The spindle rides in a quill providing 5 in. of vertical feed, either by hand or by application of the geared head attachment. The head is movable on its bracket for a throat dimension, spindle to column, adjustable between 6½ to 14 inches.



Adjustability diagrammed

The column and its support base can be assembled vertically or horizontally in various positions in relation to the table to meet given work requirements, as indicated in the illustration. With the setting for vertical operation, the table to spindle end can be any amount to 32 inches. Speed with a 1,725-rpm. motor ranges from 380 to 1,900 rpm. Four feed changes are 0.0025 to 0.010 in. per revolution of the spindle. Drilling capacity is to 1 in. in cast iron. The company will mail, on request, an illustrated bulletin providing excellent descriptive data.

If you write maker identify as IEN - 4662

LUBRICATING . . Synthetic grease remains stable over temperature range

Source: SOUTHWESTERN PETROLEUM CO.
915-19 N. Main St., Fort Worth 6, Texas

Particularly for heavy equipment

Sotol trade names a new grease in the company's line of synthetic lubricants. It retains its lubricity and will not melt or run at temperatures as high as 1,000 deg. F. It can be applied during cold weather without having to heat the grease gun. Cold does not cause it to thicken or become stiff.

YOUR INTEREST AND SUPPORT HAVE MADE IT POSSIBLE TO START OUR TWENTIETH YEAR

MAY, 1952
VOL. 20 No. 5

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES 18*, 24*, 26, 58, 61, 62, 101
Aerating ... 10
Air Conditioning ... 58*, 117*
Alloys ... 101, 114
Aluminum ... 66, 121
Armor, Floor ... 113
BALANCING 24*, 45, 96*, 112*, 121
BALLS
Metal ... 48, 116*
Plastic ... 41
Barriers, Parking Lot ... 54
Baskets ... 51, 101*
Batteries ... 114*
Battery Charging ... 30
Bearings ... 2, 3, 4, 20, 32, 46, 62, 89, 120
Bellows, Metal ... 24*, 62
BELTS
Conveyor ... 41
Fastenings ... 42
Transmission ... 24, 60, 76, 103
Benches ... 11*, 40, 98, 113
Bending ... 10, 32, 34, 72, 75, 77, 106*, 127
Bins ... 19
Bismuth ... 34
BLOWERS 27, 45, 46, 115, 117*, 119
Boards, Bulletin ... 88
Boilers ... 48, 75, 78, 90
Bolts ... 118
BOOTHS
Painting ... 76*
Telephone ... 62
Boring ... 56, 58, 75, 109
Boxes ... 22*, 30, 63, 68, 70, 83, 87, 97, 124
Brakes ... 5, 13, 45*, 59, 128
Brazing ... 2, 18, 114, 116
Broaching ... 106
BRUSHES
Hand ... 64
Machine ... 31, 64, 105
Buckets, Clamshell ... 59
Buildings ... 24*, 109*
Burring ... 9, 125
Bushings, Drill ... 33, 69, 87
CABINETS ... 69*, 123*, 125*
Cable, Electric ... 5, 13
Calculating ... 108*
Canvas ... 85
Cars ... 66
Casters ... 8, 21, 36, 41*, 50, 122*, 125
Castings ... 21, 36*, 78*
CEMENT
Iron ... 19
Portland ... 3
CHAIN
Conveyor ... 27
Fittings ... 105
Transmission ... 93, 107
Chairs ... 45, 97
Charts, Instrument ... 43
Chipping ... 49
Chucks ... 119
Circuit Breakers ... 26, 43
Circuits, Electric ... 62*
Clamps ... 4, 8, 10*, 22, 38, 58, 89, 119, 120
CLEANING
Blast ... 9, 14, 27, 44, 84, 104
Blower ... 27, 115
Drain ... 59*
Floor ... 15*, 20, 21*, 65
Materials ... 25*, 25, 50, 87*, 93, 97, 118
Rotary ... 49
Spray ... 28
Tube ... 102
Vacuum ... 36, 53*, 65, 96, 108*
Vapor ... 94
Washing ... 23*, 57*, 99*
Cloth, Tracing ... 15
Clothing, Protective ... 107*, 109
Clutches ... 45, 59, 89, 125
Communicating ... 36*, 62, 116*
Comparators ... 13
COMPRESSORS ... 14, 41, 91, 95, 99, 106, 111*
Conductors, Electric ... 5, 6*, 15, 33, 62*, 71, 73
Conduit ... 11
Connectors, Electric ... 4, 43, 49*, 65, 66, 90, 99
Construction ... 39*, 60*, 62*, 112*
Contactors ... 102
Contract Work ... 51
CONTROLS
Conveyor ... 30
Die Casting ... 113
Level ... 10, 124*
Machine Tool ... 24, 46*
pH ... 7
Positioning ... 53
Pressure ... 53, 91, 100
Process ... 28, 127*, 127
Speed ... 46
Temperature ... 11, 23*, 68, 72*, 86, 94, 98*, 114
Voltage ... 38*, 95
Converting ... 55*
CONVEYING
Belt ... 11, 24, 29, 30, 31*, 41, 73*, 89, 107*, 118
Chain ... 27, 58*
Flight ... 117
Overhead ... 6, 22, 47, 104
Pneumatic ... 10, 24, 114
Roller ... 6, 7, 128
Screw ... 18, 34, 54*
Wheel ... 6, 69*
Conveyor Controls ... 30
Cooling ... 7, 50, 97
Corrosion Proofing ... 37*, 40, 46, 60*, 60, 62, 85, 93, 123
Countersinking ... 95*, 109
Counting ... 18, 24, 67*, 71*, 119*, 127
Couplings, Shaft ... 5, 44, 49, 119
COVERS
Dock ... 16
Guide Pin ... 36
CRANES ... 49, 78*, 85, 112*
Wheels ... 8
CUTTING
Machines, Abrasive ... 2*
Flame ... 51
Tool ... 9, 48
Tools ... 17*, 20*, 31*, 40, 43*, 48, 74*, 74, 75, 124*, 124
Cylinders, Power ... 8, 14* 18, 54, 76, 120, 124
DEGREASING ... 94
Detectors, Vapor ... 7*, 105
Die Casting ... 113
Die Castings ... 126
Disinfecting ... 98, 118
Dispensing ... 9, 22*, 42, 50, 51, 87*, 97, 111*
DOORS ... 6, 14
Hardware ... 76
Operators ... 55
Drafting ... 15, 75, 110*
DRILLING
Bushings ... 33, 69, 87
Heads ... 37, 52, 112, 119
Machines ... 16*, 7, 28, 32, 70*, 73*, 94
Tool Holders ... 61*
Tools ... 9, 97, 128
DRIVES
Adjustable Speed ... 13
Components ... 3, 5, 13, 14, 26, 43*, 43, 44, 45, 49, 59, 66, 70, 76, 86, 89, 93, 103, 107, 119, 120*, 125, 126, 128
Instrument ... 54
Right Angle ... 56
Speed Reducer ... 42, 69, 70*, 78, 92, 109, 121
Variable Speed ... 26, 28, 46, 113*
Drying ... 42*, 77*, 83, 123, 127*
DUCT
Electric ... 33, 64
Ventilating ... 120
Dust Collecting ... 14, 25*, 25, 38, 41*, 45, 63, 117
ELECTRICAL PRODUCTS ... 68*, 123
Electronic Products ... 127
Elevators ... 13*, 21*, 29*, 32, 56*, 58, 71, 81, 122
Engineering ... 62*
Engines ... 23, 47, 56, 126*
Engraving ... 30, 81, 101*
Envelopes, Shop ... 36
EXPANDING ... 16*, 102
Exterminating ... 55
Extinguishing ... 2, 18*, 60
Extracting ... 42
FABRICATING ... 56, 66*
Fabrics ... 85
FANS ... 46, 53, 65, 95*, 107, 113, 128
Blades ... 45
Fastenings ... 9, 10, 49, 59, 66, 69, 73, 84, 87, 104*, 108*, 110*, 112*, 115, 118, 126
Feeding ... 9, 16, 59*
Felt ... 12, 61
Fence ... 19, 67
Fibre ... 68
Filing ... 68
Filling ... 61
FILTERING
Air ... 4, 22
Liquid ... 60, 63
Flexible Shaft Equipment ... 44, 110, 114
Floats ... 78
Floors ... 3, 5, 19, 41, 47, 55, 71, 75*, 99, 101, 113, 127, 128
Fluxes ... 87
Fountains, Drinking ... 50
FREEZERS ... 70, 87, 115*
Furnaces ... 33, 77
Furniture ... 17*, 45, 97, 98, 99*, 101*, 111*, 113
Fuses ... 6, 73

Reader Service Form ... 16, 112
Useful Information ... 24
New Literature ... 80
Ideas For You ... 64
"I Wish I Had" ... 128

GAGES
Dimensional 13, 15*, 25*, 50, 52*, 83, 91*, 96, 116*, 120*, 128
Level ... 6, 115
Pressure ... 16*, 32, 93, 125*
Strain ... 53
Galvanizing ... 28
Gears ... 86, 126
GENERATORS
Electric ... 25*, 56, 101
Gas ... 79*
Steam ... 48, 75, 78, 90
Glass ... 27*, 68, 82, 123
Gloves ... 15, 41, 67, 75*, 78, 85, 100, 108
Goggle Lenses ... 111
Governors ... 46
Grabs ... 38
Grating, Floor ... 7, 127
GRINDING
Belts ... 5*, 62
Heads ... 3*
Machines ... 20*, 25, 44, 49, 85*, 93*, 108, 110, 114, 116*, 123*
Tools ... 12, 25, 29*, 97, 112
Wheels ... 11*, 35, 44, 56, 101
Wheel Dressers ... 22, 54*, 115*
Grooving ... 74
Guides, Tapping ... 40
HAMMERS 39*, 48*, 67*, 81, 100, 106, 30, 70
Handles ... 8*, 19, 38, 51, 52, 54, 59, 60, 63, 70, 82, 83, 87, 93*, 97*, 97, 101*, 117, 124
Hard Facing ... 111
Hardboard ... 89*
HEADS
Drill ... 37, 52, 112, 119
Grinding ... 3*
Relief ... 34
Tapping ... 52, 112
Heat Exchanging ... 46*, 49
Heat Treating ... 19*, 33, 103, 114, 116
HEATING
Cabinets ... 123*
Elements ... 5, 11, 41*, 49, 72, 108, 116, 122
High Frequency ... 19*, 77, 110*, 114, 116
Liquid ... 40*, 52, 121*, 127
Oven ... 76
Space ... 18, 33*, 82
Hinges ... 12
Hoists ... 49, 63, 73, 78, 82, 85, 89, 90
Holders, Tool ... 61*
Holsters, Tool ... 20
Hoppers ... 9, 68
HOSE ... 119
Fittings ... 4, 8, 58, 89, 116
Metal ... 39, 112
Hygrometers ... 111*

(Continued Over)

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* _____
- ☐ *Production, Mr.* _____
- ☐ *Engineering, Mr.* _____
- ☐ *Product Design, Mr.* _____
- ☐ *Purchasing, Mr.* _____
- ☐ _____

IDLERS, CONVEYOR ... 11, 24
INDICATORS
Flow ... 40, 122*
Level ... 4, 10, 15
Temperature ... 40
Ink ... 16, 17
INSULATING
Electric ... 25*, 35, 38, 90, 92, 125
Gage ... 17
Thermal ... 17, 90
Isolating, Vibration ... 86
JACKS
... 9*, 7, 33, 35, 39, 72
JOINTS
Pipe ... 80, 88
Shaft ... 43
KEYSEATING ... 106
LABELS ... 5, 8, 100
Ladders ... 36, 98, 101
Lamps ... 11, 26*, 114
Lapping ... 25, 61
Latches ... 104*
LATHES ... 9*, 39, 48, 72
Tools ... 75, 122
Layout ... 16, 40, 86
Lighting ... 11
26*, 52*, 61*, 64, 72*
92, 101, 104, 114
Lights, Indicating ... 83
Loading ... 5
Lockers ... 31
Locknuts ... 59, 69, 84, 112*, 115
LUBRICATING
Equipment ... 42, 92, 97
Materials ... 1*
1, 4, 26*, 53, 102*, 115
MACHINING ... 5*, 34*
Magnesium ... 44*
Magnets ... 52
Magnifying ... 51*
Management ... 54*, 124*
MARKING
Machines ... 13, 30,
54, 60, 81, 94, 97*, 110
Materials ... 5*,
5, 8, 17, 51*, 68, 100
Tools 7, 33*, 48, 91, 109*, 110
Masks ... 64
Mats, Floor ... 75*
Melting ... 9, 77, 114
Metal
Cast ... 42*
Gauge (Sheet/Plate) ... 10
Laminated ... 49
Perforated ... 68
Shapes ... 51, 66, 121
Spraying ... 26*
Strip ... 108, 116
Treating ... 26*, 64, 74, 103
METERS
Drives ... 54
Electric ... 58, 87, 113*
Electronic ... 16*, 38*, 115
Flow ... 40, 46*, 123
Liquid ... 33, 95, 122
MILLING
Cutters ... 17*, 31*, 40, 74*
Cutter Accessories ... 105*
Machines ... 35*, 86
Spacers ... 8
Mixing ... 73, 96*, 102*
Models, Industrial ... 86
Molybdenum ... 4
Monorail ... 6
MOTORS
Control ... 12, 47, 55*, 91
Electric ... 5, 10, 28,
46, 52, 67, 71, 113*, 113
Hydraulic ... 76
Pneumatic ... 14
NAMEPLATES ... 68, 71
Nickel Alloys ... 3
Nozzles, 18*, 23, 24, 50, 74, 104
Numbering ... 94, 109*
Nuts ... 73, 118
OIL CONDITIONING ... 31
Oscilloscopes ... 42
Ovens ... 76
PACKAGING
Containers ... 40
Equipment
11, 60, 61, 121*, 123*
Materials ... 35*, 45*
Packings ... 62, 98
PAINTING
Conditioning ... 52
Equipment ... 34, 38, 40*, 76*
Materials ... 61*, 62, 116*
Pallets ... 63, 97*, 124
Paper ... 57, 72, 95, 107
Partitions ... 24*
Pencils ... 75
PIPE ... 36, 69, 98, 126*
Coils ... 49, 72
Fittings ... 4, 9*, 30,
37, 38, 54, 57, 67, 98, 112
Plastic ... 26*, 89*, 125*
Plant Sites ... 28*
PLASTICS
Materials
26*, 35*, 37, 67*, 68,
81*, 83, 85*, 92, 93, 103
Molding Equipment ... 20*, 118*
Products ... 1*, 30, 41, 54
Plates, Floor ... 71
Plating ... 75*, 121*
Plywood ... 104, 117
Polishing ... 16, 63*, 64, 88, 103*
PRESSES
Hand ... 8*, 111
Hydraulic ... 21, 73, 88, 89, 126
Mechanical ... 13, 124*, 107*
Pneumatic ... 43, 76, 116
Tools ... 1*, 10, 34, 36, 82, 83*
PRINTING
Equipment ... 29,
7*, 65, 106*, 111, 115, 122
Materials ... 95, 107
Processing ... 7*, 105*
Projecting ... 91
Protecting ... 14, 15,
17, 23, 27, 36, 41, 46*,
56*, 63*, 64, 67, 75*,
76, 85, 100, 102*, 105,
107*, 108, 109, 111, 118
Protectors, Thread ... 57
Pulling ... 6*
15, 35, 106*, 111, 124
Pulverizing ... 41*, 57, 72, 98, 104*
PUMPS
Centrifugal
14, 22, 30*, 37, 39*,
59, 58, 75, 95, 100*, 121
Cement ... 58, 119
Hand ... 20, 29, 51, 72, 122
Hydraulic
31, 51*, 53, 76, 82, 126
Pneumatic ... 52
Reciprocating ... 59*
Rotary ... 13,
17, 32, 37, 42, 96, 126
Turbine ... 121
Vacuum ... 14, 66
Punching ... 1*, 39*, 46, 89, 100
PYROMETERS ... 18, 44*, 72*, 102
Accessories ... 34
RACKS ... 31*, 56, 109
Rails ... 117
Reaming ... 9
Record Keeping ... 73
... 28*, 123, 127
Recording ... 28, 43
RECTIFYING ... 37*
45, 54, 56*, 76*, 110*
Reducers, Speed ... 42,
69, 70*, 78, 92, 109, 121
Reeling ... 52
Reels ... 87, 92
Refractories ... 72, 113
Refrigerating ... 35, 70, 87*, 115*
REGISTER, MANUFACTURERS' 50*
Relays 11, 19*, 69, 77, 118*, 123
Research ... 72*
Resistors ... 94, 114*
Respirators ... 17, 27, 63*, 107*, 109
Retrieving ... 87, 92
RIVETING ... 32*
Rock Drilling ... 20, 108*, 106
Rolls, Machine ... 35, 93*, 97
Roofs ... 14*, 110, 126
Rooms, Screened ... 16
Rubber Products ... 15
... 28*, 67, 74*, 88
SANDING ... 31, 125
SAWING
Blades ... 55, 104, 125
Machines
40*, 45*, 57, 61, 115
Machine Parts ... 26
Tools ... 35, 88, 89, 126*
Scaffolds ... 3, 10*, 17, 40*, 67, 98
Screw Driving ... 9, 68*, 99
Screws ... 9
10, 66, 73, 87, 118, 126
SEALING
Caps ... 54
Materials ... 12, 29, 34*,
46, 55*, 62, 86, 94, 98, 117
Shaft ... 124
Separating ... 4, 7, 63, 70, 85
Sewing ... 19*, 60
Shafts, Flexible ... 53, 120*
Shaping ... 68*, 100
Shearing ... 6, 20*,
72, 47, 61, 72, 87, 124*, 127
Shearers ... 3
SHIELDS
Face ... 14, 102*
Interference ... 76
SHIPPING
Containers ... 1*, 30, 68
Data ... 32*, 104*
Shredding ... 117
Signaling ... 51*, 74, 83, 122*, 123
Signs ... 88
Silicones ... 30*, 67
Skids ... 31, 60, 70
SLEEVES
Slotted ... 102
Square Hole ... 77
Slitting ... 63, 81
Soap ... 50
Soldering ... 16, 18, 34, 44*,
48, 61, 77, 87, 114, 116
Solenoids ... 5, 59
Solvents ... 57
Spraying ... 18*, 23, 24, 34, 50, 74
SPREADING ... 71*
Springs ... 120
Sprockets ... 70, 93
Stampings ... 12, 51, 84
Stapling ... 29, 34, 72, 120*
Starters, Fluorescent ... 101
Steels 6, 19, 30*, 32*, 35, 43,
69*, 69, 70*, 74*, 105, 107
STERILIZING ... 66*
Stools ... 99*
Stopwatches ... 92
Storing ... 19, 22*, 23*, 31*,
31, 56, 69*, 86, 109, 125*
Straightening ... 38, 57*
Strainers ... 74, 118
STRAPPING ... 21, 38, 103
Stripping ... 21
Stroboscopes ... 84
Surplus ... 4, 10
Sweeping ... 21*
Switches ... 10*,
15, 16*, 21, 37, 46, 59,
66*, 78*, 98*, 106, 110, 126
TABLES ... 101*, 119
Drawers ... 111*
Tablets, Salt ... 118
Tackers ... 29
Tanks ... 19, 86
Tapes ... 8, 12, 35,
40, 44, 51*, 60*, 86, 90, 125
TAPPING
Guides ... 40
Heads ... 52, 112
TESTING
Electric ... 113*, 115
Electronic ... 27*, 42, 107*, 115
Hardness ... 41, 72
Metal ... 48*
Moisture ... 18*
Pressure ... 52*
Radiation ... 49*
Resistance ... 59*, 90
Spring ... 77*, 84, 112*
Static ... 108*
Tension ... 61
Vapor ... 7*, 105
Viscosity ... 1*, 83
X-Ray ... 89
Thermocouples ... 94
Thermometers ... 16*,
25, 32, 102, 109*
Thermostats ... 39, 46, 59
THREADING
Heads ... 52, 112
Machines ... 22, 88, 100*, 118*
Tools ... 40, 51, 74
Timing ... 11*, 16,
52, 55, 67, 77, 78, 91*, 92
Ties ... 26, 96, 99, 125
Tongs ... 8*
Tractors ... 105*, 125*
TRAILERS ... 23, 63
Tramrod ... 47
Transfers, Decal ... 68
Transformers ... 49*
Traps ... 4, 19, 107, 126
TRUCKS
Attachments ... 12*, 122*
Hand ... 16, 33,
54, 60, 104, 108, 118, 121*
Hand Lift ... 102, 103
Locks ... 59
Power ... 105*, 125*
Power Lift ... 13, 36, 50,
65, 75, 92, 95*, 102,
109, 110*, 121, 122, 124*
TUBES ... 26, 35*, 37, 110, 123
Fittings ... 4, 84
Flexible ... 11, 39, 112
Tumbling ... 99*, 127*
UNIONS ... 32
VALVES
Compressor ... 64
Line ... 6*, 26, 30*,
47*, 47, 69, 70, 83,
84, 93, 103*, 106, 120, 128
Operating ... 18,
76, 91, 105, 114*, 116, 127
Operators ... 8
Power Operated ... 6,
77, 106*, 106
Regulating ... 29, 53,
68, 86, 91, 106*, 114, 123
Relief ... 37, 116
Repair Parts ... 12
Vent ... 22, 99
Vaporizing ... 24
Ventilating ... 28, 45, 46,
53, 65, 95*, 100*, 107,
113, 117*, 119, 120, 129
Vibrating ... 10, 16, 28, 80*
Viscometers ... 1, 83
Vises ... 31, 39, 42*, 81, 83*, 111
WASHERS ... 84
Washrooms ... 31
Weighing ... 20, 41, 81, 122*
WELDING
Arc ... 37*, 85, 89, 95
Controls ... 34*
Flux Collectors ... 95
Materials ... 30*, 57, 111
Positioners ... 18, 122
Resistance ... 76*, 82
Wheels ... 8, 57, 125
Winches ... 15
Winding ... 63, 81
WIRE
Electric ... 6*
Parts ... 51
Rope Fittings ... 105
Staple ... 72
Steel ... 99
WIRE CLOTH ... 96
Parts ... 118
Wood Working ... 68, 115, 126*
Wrenches ... 2*, 27, 43, 100*
X-RAY ... 8*

If you write maker identify as IEN - 4663

WRENCH . . Multiple pneumatic to drive a pattern of nuts or screws

Source: INGERSOLL-RAND CO.
11 Broadway, Dept. PT, New York 4, N. Y.

Drives all at once

Multiple Nut Runner designates new assembly of two or more of the company's pneumatic wrenches in a specified pattern to drive all of the nuts or cap screws required to complete a multiple fastening. Each wrench in the assembly has its own inlet and pressure adjustment so it can be set to stall at a predetermined torque. All are supplied with compressed air from a manifold. Suitable shackles are added to support the tool for vertical, angular or horizontal application in service.

A spring balancer is usually employed to cancel out the tool weight so it is not a factor. The fact that the wrenches ride upon two or more bolts or studs cancels out any torque action on the operator. Each assembly is built to fit the user's requirements. Wheel lugs, differential ring gear assemblies, spring and axial assemblies, shackle bolts, differential bearing caps are representative applications.

The assembly illustrated is available for a bolt pattern to lie within a 6 to 10-in. circle. Bolt size ranges from $\frac{3}{8}$ to $\frac{1}{2}$ inch. Stall torque at 90-lb. air pressure is 57 ft. lb. with a No. 380P pneumatic motor. It is 33 ft. lb. with a 380M motor. Weight of this assembly is 65 pounds. Intended application is vertical. Air inlet is 1-in. pipe.

If you write maker identify as IEN - 4664

CUTTING . . Abrasive disc machine clamps on pipe, feeds and cuts around it

Source: TRI-CLOVER MACHINE CO.
2807-11 60th St., Kenosha, Wis.

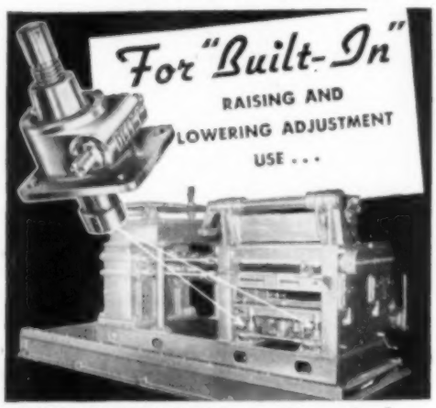
List is $250 to $396

Motor driven abrasive disc is pivoted on a ball-bearing ring which in turn rides upon a combination of clamp ring and work-supporting rests in this new Super-Speed abrasive cut-off machine. It is available in five sizes for pipe or tube measuring 4 to 12 in. in diameter. It clamps on the pipe in a measured position, then is fed into and around the pipe to complete a cut through the pipe wall.

Operation is on 110-volt ac. The machine for 4-in. pipe weighs 30 pounds. It will cut through a 15-gage 2½-in. stainless steel tube in 30 seconds. The machine is supplied with two abrasive discs as standard equipment in addition to the extension cord and plug for circuit connection. The base can be secured in a vise as shown in the illustration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4665



DUFF-NORTON Worm Gear Jacks

These jacks may be used singly, in tandem or in groups of four, six or eight, connected by means of shafts or mitre gears for raising and lowering mill tables, machine beds, presses, and many other applications. Capacities vary from 5 to 50 tons, with raises from 3" to 25". Jacks are furnished in accordance with load per jack, raise required and application.

For suggested applications write for Bulletin AD-5 IEN

THE DUFF-NORTON MANUFACTURING CO.
MAIN PLANT and GENERAL OFFICES, PITTSBURGH 30, PA.
CANADIAN PLANT, TORONTO 6, ONT.
"The House that Jacks Built"

If you write maker identify as IEN - 4666

Here's A Book You Should Have . . .

The most complete and authoritative discussion of rolling bearings — and the fundamental reasons for their vastly increased use. Has been widely used as a text book by engineering colleges. Free for the asking. Specify Booklet T.

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • Division of General Motors • Bristol, Connecticut

If you write maker identify as IEN - 4667

FASTER ACTION!

No groping! No fumbling! Just pull the trigger and flame-smothering Carbon Dioxide goes to work fast! You can count on a Kidde Carbon Dioxide Portable to beat fire to the punch.

Walter Kidde & Company, Inc.
536 Main St., Belleville 9, N. J.

Kidde

If you write maker identify as IEN - 4668

EASY-FLO AND SIL-FOS MAP OF THE U.S.

Wherever you are there's an EASY-FLO and SIL-FOS dealer handy—all set to supply you promptly with these celebrated low temperature silver brazing alloys—and to help you get the full benefit of the remarkable speed, strength and economy in joining metals that are inherent in EASY-FLO and SIL-FOS brazing.

WRITE TODAY for our dealer list and a copy of the 24-page **BULLETIN 20** which gives the whole amazing story of fast, low-cost EASY-FLO and SIL-FOS brazing.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

If you write maker identify as IEN - 4669

Half a cupful . . . *can sink a boat*

Power boat skippers don't frighten easily.

Yet they're scared stiff of gasoline seepage. "It's dynamite," they tell you. "... half a cupful can blow your boat to 'Kingdom Come'."

So they put boat builders right on the spot when it comes to gas tanks.

They want tanks made of metal that sea air, bilge, or gasoline won't corrode ... metal that's easy to fabricate, to weld gas-tight ... metal that doesn't form sludge that "gums up" fuel lines and leaves you going nowhereville, slow.

Now that's a mighty tall order.

But boat builders filled it. Filled it with a metal that satisfies *their* demands ... and the strict requirements of the Yacht Safety Bureau. Filled it with a metal that qualifies in every respect for gas tanks, among stock boat builders.

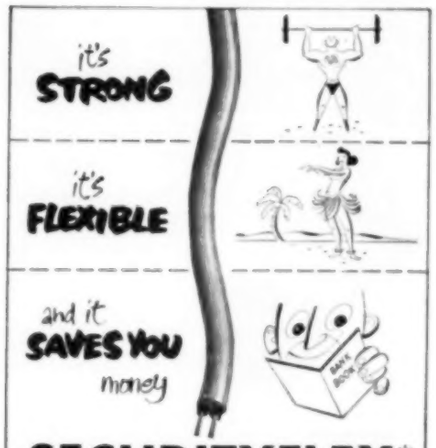
The one metal that meets, and more than meets all these requirements, is *Monel*, an Inco Nickel Alloy.

A Cue for You? Write for "Standard Alloys for Special Problems"—Summarizes the important facts and data on 12 INCO Nickel Alloys in one booklet. Gives a quick comparative guide to judge for yourself which alloy may be a ready answer to your problem, too.

It's yours for the asking.

THE INTERNATIONAL NICKEL COMPANY, INC.
75 Wall Street, New York 5, N. Y.

If you write maker identify as IEN - 4671



SECURITYFLEX*
PORTABLE CORD

Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

the right cable for the job

ANACONDA®
WIRE AND CABLE

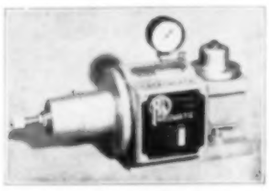
*Trademark

If you write maker identify as IEN - 4672

If you write maker identify as IEN - 4673

GRINDING . . Pneumatic head provides spindle speeds to 100,000 rpm.

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.



Spindle rides on jets of air

Compressed air at 80 to 100 lb. is connected through a line filter to this new grinding head. The air enters through a plug valve to issue at six nozzles directed at an aluminum turbine runner mounted on the spindle end. Rotating speed is controlled by a governor, also air operated, to adjust position of the throttle valve. Correct amount of power air is thus applied at the turbine to hold to a preset speed independent of fluctuation in the grinding load. The head takes about 20 cfm. of compressed air. It is available in two speed ranges from 25,000 to 50,000 rpm. and from 60,000 to 100,000 rpm.

A feature in the design is the manner in which the spindle is floated on air rather than being carried in the usual ball bearings. This is made possible by the use of air jets located at the bearing points around the spindle so there is no metal-to-metal contact with the bushings.

Air pressure shows on a gage mounted on the head to indicate the nozzle pressure driving the turbine at any given moment. This gage can be watched to know the instant a wheel contacts the work. It can be employed to check hole size in ordinary repetitive work by using automatic infeed on the grinder and, after kick-off, removing the wheel from the work when the needle on the gage drops to a predetermined reading. Duplication to 0.0001 in. is possible by this method. Means to reduce spindle speed to a safe amount for initial wheel truing completes the assembly.

If you write maker identify as IEN - 4674

PRESS TOOLS . . Punch and die units for holes in mild steel to ¾ inch

Source: WALES-STRIPPIT CORP.
361 Payne Ave., North Tonawanda, N. Y.

Fluid volume sets stripping action

Compressible fluid is employed in place of a stripper spring in this new Type-HS design of the company's self-contained punch-and-die units. The fluid is enclosed in cylinders on each side of the centrally located punch at the open end of the C-shaped frame which maintains punch and die alignment.

Downward movement compresses the fluid. Ram retraction permits expansion to pull the punch back out of the work. The new unit is available for specified round or shaped holes in mild steel to ¾ in. in thickness. Any number of units can be anchored on a press bed for a desired hole pattern.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 4675

SAFETY EQUIPMENT FOR ALL INDUSTRIES

Time Saving on Maintenance

IPCO WINDOW PLATFORM

for WINDOW WASHERS • PAINTERS GLAZERS • OTHER WINDOW MAINTENANCE MEN

Rests on outside sill and is held firmly in position by means of adjustable, telescopic steel tube on the inside. Each platform tested for 800 pounds. Collapses compactly. Guard rail 34" high. Weight 32 pounds . . . APPROVED BY THE PENNSYLVANIA DEPT. OF LABOR & INDUSTRY

WRITE FOR BULLETIN NO. 61

IPCO Safety Equipment for all Industries
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH ST. • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 4676

LUBRICATION ECONOMY

"We heartily recommend LUBRIPLATE LUBRICANTS"

so says Porter-Cable Machine Co., a leading manufacturer of portable tools. They consider effective lubrication so important to good tool operation, they have arranged to have a LUBRIPLATE Lubricant packed in tubes under their label and sell the tubes through their dealers.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

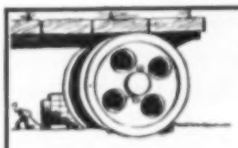
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J.—Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 4677



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off

LONE STAR CEMENT CORPORATION

Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

If you write maker identify as IEN - 4678

Norma-Hoffmann PRECISION MADE Roller Bearings

Give you MAXIMUM Capacity in MINIMUM Space

And equally important—they are interchangeable with single-row ball bearings

If your bearings must operate under such severe conditions as high speeds, heavy loads, temporary overloads, shock or vibration, then *Norma-Hoffmann Roller Bearings* are the ones to use. Here's why —

- Solid cylindrical rollers between cylindrical races provide maximum load contact area, increased steady load capacity, and a larger shock absorbing capacity than any other type of single-row bearing.
- A safety factor margin ample for temporary overloads up to 50% beyond normal rating, as under peak loads, in unusually severe duty, or under shock conditions.
- Large contact area with the most efficient load distribution provides greater wear-resisting surfaces, assures true rolling between rollers and raceways, results in minimum friction between roller and cage.
- A lower friction coefficient under heavy load than any other type of bearing permits.
- Speedability equal to that of any ball bearing, size for size, up to 35,000 R. P. M.

Write for catalog or engineering assistance.

NORMA-HOFFMANN BEARINGS

NORMA-HOFFMANN BEARINGS CORP. • STAMFORD, CONN.
FIELD OFFICES: Atlanta, Birmingham, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Jacksonville, Kansas City, Los Angeles, San Francisco, Seattle

If you write maker identify as IEN - 4679

In the shop – in the field –

A new kind of lubricant

Moly-sulfide is a tenacious solid-film lubricant with remarkable properties under extreme pressure, high velocity and fretting conditions. Many new uses for *Moly-sulfide* are being found every day in the shop and in the field.

We have compiled 154 case-histories of successful applications of molybdenum sulfide to solve a wide range of industrial and technical problems; these are published in a form most useful to those who want practical information on what has already been accomplished by this new kind of lubricant.

Send for your free copy of *Moly-sulfide: In The Shop – In The Field*, a 40-page booklet of up-to-date information.

Moly-sulfide
A LITTLE GOES A LOT
SEND FOR THIS FREE BOOKLET TODAY!

Climax Molybdenum Company
500 Fifth Avenue · New York City

MS 5

If you write maker identify as IEN - 4680

Poro-Stone Filtration FOR COMPRESSED AIR

EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data — Bulletin 176.

Automatic TRAP

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN - 4681

TIGHT! TRUE! and plenty TOUGH!

CRANE MALLEABLE IRON FITTINGS

Be as choosey with pipe fittings as with valves, and you'll demand Crane malleable fittings every time. They'll help you make stronger, tighter, better-looking joints—faster and easier. Watch how quickly you start a joint with their cleanly chamfered ends . . . how smoothly you pull up these accurately threaded, truly aligned Crane fittings. Give 'em an extra turn if you wish; their top quality close-grained iron will take it without harm.

In straight or reducing patterns, you get a complete choice of malleable fittings in the Crane line. See your Crane Catalog or your Crane Representative.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*
VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

PUBLISHED BY THOMAS PUBLISHING COMPANY

W. E. IRISH
Editor and Vice President

F. MORSE SMITH
Vice President in Charge

J. W. MOSS
Managing Editor

H. T. HIRST
Assistant

A. J. GRANICK
Circulation Manager

R. B. COHEN
Production Manager

EDITORIAL ASSISTANTS
M. L. Walsh; A. J. Willis

CIRCULATION AND READER SERVICE ASSISTANTS
B. Goldstein; V. Puzzio

BUSINESS DEPARTMENT ASSISTANTS
H. Benjamin; R. Irish; B. Sullivan

These are our local offices:		Telephone
Atlanta (6)	3 Ivy Dr. N. E.	VEnon 2969
Boston (8)	50 Boylston Street	LAfayette 3-4681
Chicago (4)	201 West Jackson Blvd.	HArrison 7-3750
Cleveland (14)	3145 Superior Ave.	CHerry 1-6582
Detroit (30)	115 Hendry Rd. (G. P.)	TUxedo 1-1161
Indianapolis (19)	973 N. Sheridan Ave.	BLackstone 0293
Los Angeles (15)	1200 Rives Strong Bldg.	VAndike 8921
New York (1)	461 Eighth Avenue	LOngacre 3-1566
Philadelphia	P. O. Box 96, Upper Darby	GRanite 2-4200
Pittsburgh (22)	2101 Fairmont Bank Bldg.	FAirfax 1-0244
Toronto (1)	137 Wellington St., W.	EMpire 4-1421

THIS ISSUE 67,000 COPIES

Printed by Charles Francis Press, New York

Industrial Equipment News only solicits in a news reporting capacity for data supplied to it on new industrial developments.

Copyright 1952 by
THOMAS PUBLISHING COMPANY
461 Eighth Ave., New York 1, N. Y.

CCA

Vol. 20 MAY, 1952 No. 5

Progress

It all started when Adam ate the Apple and was forced to go to work for a living. He might have remained comfortably in The Garden had he been on the "request list" of a service such as Industrial Equipment News. There, perhaps, he might have read about the defective fruit detector, forerunner of the recently developed electronic equipment. He then could have inquired for details, placed his order, installed the equipment and been protected.

Unfortunately for Adam, Industrial Equipment News did not come on the scene to take its place as reporter of the things on which industrial progress is based until some years later, nineteen years ago this month to be exact. Then it did originate its specialized product-information service with an assembly of news concerning a hundred and sixty currently new developments.

Adam might not have been able to understand many of the technical terms. None the less he is technically responsible for its start in his own transgression which resulted in trouble which, in turn, is the root of most of the progress the world has made to date. It is progress that has increased in complexity from man's first control of fire and his invention of the wheel until the real need for specialized information was answered by introduction of Industrial Equipment news.

Some said that introduction of new equipment would throw men out of work. They even forecast dire consequences. In answer to this we quote a statement made in connection with the Centennial of Engineering.

"In 1900 there was one engineer to two-hundred ninety industrial workers. In 1950 it was one to seventy. During the past sixty years the number of engineers has increased from twenty-five thousand to four-hundred thousand with possibility that the demand will be doubled in another ten years. The rapidly accelerating pace of our modern industrial world demands more technical knowledge, imagination and resourcefulness."

Others said the IEN service would peter out for lack of news of as many as a hundred new products each month. That is answered, of course by the IEN accumulated descriptions of some 45,000 new things in the past nineteen years and in current addition of two hundred and fifty per month.

Fundamental reason lies in two factors. First is the ability of certain individuals to recognize and take steps to correct trouble from weakness in an existing facility, impossible costs of an existing method, inability to secure customary materials, introduction of new things that make old ones obsolete, style change to stimulate user interest. Second is desire by other individuals to secure for themselves a share of the profits in successful products by competitive manufacture.

The net result is steadily multiplying new-product activity in every direction. No one can say what may come next. It is only essential that you keep informed. You can blame Adam if you need anyone to hold responsible for a current trouble problem of your own. You can ask IEN if you want assistance in solving it either through information in current issues or through IEN's extensive industrial contacts developed for your use.

W. E. Irish.

If you write maker identify as IEN - 4682

MILLIONS of HOSE CLAMPS

Clamps for radiator hose, heater hose, air hose, air brake hose, automotive, aircraft and industrial hose.

WITTEK CLAMPS . . . all brand new of highest quality steel, some are stainless. Made for aircraft. *Cost government 8¢ to 32¢ each.*

Order by Army or Navy Stock No.	Approx. Quant. Hy	I.D. of Clamp	SALE PRICE 100	500	1000
FBC-A1	30M	5/8"	$3.00	$12.50	$20.00
FBC-2	30M	21/32"	3.00	12.50	20.00
FB-4	3M	3/4"	3.00	12.50	20.00
AN-748-26	20M	29/32"	3.50	15.00	25.00
FBC-4	15M	7/8"	3.50	15.00	25.00
FBC-7	15M	15/16"	3.50	15.00	25.00
AN-748-30	25M	1 1/16"	4.50	18.75	30.00
FB-12	20M	1 1/4"	4.50	18.75	30.00
FC-14	20M	1 3/8"	4.50	18.75	30.00
AN-748-44A	40M	1 7/16"	5.50	23.75	40.00
FBC-16	100M	1 1/2"	5.50	23.75	40.00
FB-16	160M	1 17/32"	5.50	23.75	40.00
FBC-20	5M	1 5/8"	6.00	25.00	40.00
FB-24	25M	1 15/16"	6.00	25.00	40.00
AN-748-56	3M	2 1/4"	7.00	30.00	50.00
AN-748-58	10M	2 7/8"	7.00	30.00	50.00
FBC-48	15M	2 3/4"	7.00	30.00	50.00
AN-748-91 or FBC-55	10M	3 "	7.00	30.00	50.00
FBC-61	3M	3 1/16"	7.00	30.00	50.00

WITTEK Clamps

IDEAL CLAMPS . . . . heavy steel or stainless steel, 4, 5, or 6 adjustable positions. *Cost government 14¢ to 18¢ each.*

Order By	Approx. Quan.	I.D. of Clamp	SALE PRICE 100	500	1000
AN-746-11	10M	1 3/8"	$4.50	$20.00	$40.00
AN-746-12	13M	1 1/2"	4.50	20.00	40.00
AN-746-14	10M	1 3/4"	4.50	20.00	40.00

Ideal Clamps
AN-746-11
AN-746-12

IDEAL CLAMPS . . . . heavy steel, adjustable 3 positions, self-locking nut. *Cost government approximately 12¢ each.*

Order By	Approx. Quan.	I.D. of Clamp	SALE PRICE 100	500	1000
AN-B-341	25M	7/8"	$3.25	$15.00	$25.00
AN-746-7	25M	1"	3.25	15.00	25.00

Ideal Clamps
AN-746-7
AN-B-341

ALL CLAMPS SUBJECT TO PRIOR SALE

Aero Seal and Hoc Out clamps also available. Send for list and prices.

AKRO-MILS, INC., P. O. Box 989, Akron, Ohio

If you write maker identify as IEN - 4683

ONLY SEALMASTER BALL BEARING UNITS Offer ALL these features...

★ Permanently Sealed
★ Self-Aligning
★ Pre-Lubricated

Replace worn bearings with SealMasters. They give lasting service and economy. Only SealMaster bearings combine the features essential to smooth operation, long life, easy installation and top performance in quiet power transmission.

★ Flange Units
★ Pillow Blocks
★ Take-up Units
★ Cartridge Units
★ Flange Cartridge Units

Write us for YOUR free copy of SealMaster Catalog No. 845

BEARING DIVISION
STEPHENS-ADAMSON MFG. CO.

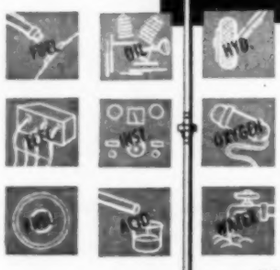
Tellevel—Bin Level Controls · Car Loaders · Variable Speed Reducers · SealMaster Ball Bearings · Car Pullers · Winches · Sace Speed Reducers

231 RIDGEWAY AVE., AURORA, ILL.

If you write maker identify as IEN - 4684

throw your wrench away

CONNECT or DISCONNECT *any* fluid or electric line *without a wrench*



Join or separate any line with your fingers. You do it in seconds instead of minutes, when you use leakproof WIGGINS Inst-O-Matic couplings. We design to meet your requirements.

SUBMIT YOUR PROBLEM. WIGGINS Inst-O-Matic couplings can reduce your costs. Write today. There's a qualified representative near you.

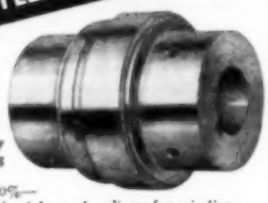
Wiggins
Aircraft Division
E. B. WIGGINS OIL TOOL CO. Inc.
3434 E. Olympic Blvd., Los Angeles 23

INST-O-MATIC COUPLINGS

If you write maker identify as IEN - 4685

new design...
Adds 50% to safe maximum speeds of

LOVEJOY FLEXIBLE COUPLINGS



With the collar held in place by a special multiple leaf spring, this new Lovejoy Flexible Coupling handles speed increases up to 50%—with complete safety! Instantly adjusts for misalignment, vibration, surge or backlash. No wear on metal jaws — no tear-downs to change cushions — no lubrication ever needed! Lovejoy Couplings are for services from 1/6 to 2,500 H.P.

Write for catalog with handy selector charts

LOVEJOY FLEXIBLE COUPLING CO.
5014 W. LAKE ST. • CHICAGO 44, ILLINOIS
Also Manufacturers of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions

If you write maker identify as IEN - 4686

FILL CARS *Faster*

with an **S-A BOX CAR LOADER**

One man, with an S-A Box Car Loader, can make quick work of loading and trimming a box car. The loader operates without attention after it is placed in the car, and flow of material is started. This handy machine automatically loads and trims in a fraction of the time required by hand methods. Exposure of operator to dust is reduced to the minimum. Save time and manpower with this standard S-A portable loader . . . It handles loose granular material up to 2-inch lump size.

Write for Bulletin No. 968 and full details.

STEPHEN S-ADAMSON MFG. CO.
TELLEVEL—Bin Level Controls · Car Loaders · Variable Speed Reducers · Car Pullers · SealMaster Ball Bearings · Winches · Saco Speed Reducers
231 RIDGEWAY AVE., AURORA, ILLINOIS

If you write maker identify as IEN - 4687

Stands Extreme Punishment on School Buses!

More proof that **PABCO MASTIPAVE** is the floor covering for YOU!

Listen to the President of Ward Body Works, bus builders of Conway, Arkansas, and Mexico City.

"Nothing on earth is more damaging to bus floors than feet of school children. To stand up, a most durable floor covering is needed. We install Mastipave and Grip-Tread in more than 1500 buses each season. With more than 5 years' service have found Mastipave and Grip-Tread in good condition and ready for several more years. It doesn't crack or wear out—you've got to wear it off!"

PABCO MASTIPAVE *in roll goods and tiles*
GRIP-TREAD *in roll goods only*
...Proved, for over 28 years—in schools, industries, hospitals, public buildings.
...Costs little, looks good, wears long.
...Worth investigating, for YOUR toughest job!

SEND NOW FOR THE FULL STORY OF MASTIPAVE
PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)
GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."
NAME ____
ADDRESS ____
CITY ____ STATE ____

If you write maker identify as IEN - 4688

MACHINING . . Special machine to process parts for Army tanks

Source: BUHR MACHINE TOOL CO.
815 Green St., Ann Arbor, Mich.

Assembly of standard units

Work is mounted on a fixture riding a wheel-equipped carriage in this new special machine. The carriage operates on a track and is transferred manually from one station to the next as 11 drilling and chamfering operations and 9 tapping operations are performed. The fixture is electrically interlocked with the machining cycle at each station so it must be correctly positioned in order for the operation to proceed. Two of the five machining heads are mounted vertically. The other three are horizontal. All are tied in with the bed carrying the fixture track.

If you write maker identify as IEN - 4689

MARKING . . Semi-solid paint in stick form for smooth surfaces

Source: CLEARVIEW CO.
356 E. Houston St., Dept. 3, New York 2, N. Y.

Box of eight lists at $3.50

Lacquer-Stik trade names a new stick or crayon form of semi-solid paint for application on metals or any other smooth surface. It can be employed to fill in markings or to write upon the surface. Excess material can be wiped off before the paint hardens permanently. Then it will neither rub off nor smear. Eight colors include red, blue, yellow, green, silver, gold, white, black.

If you write maker identify as IEN - 4690

GRINDING . . Abrasive belt for faces of jet turbine blades

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

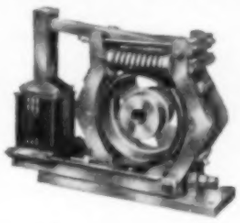
In specified widths

Scallop-Edge trade names and describes a new abrasive belt to grind and finish the contour surfaces of blades employed in jet turbines and compressors. The scallops on the belt curve around the edges of the contact wheel so faces and fillet areas can be polished and the two previous separate polishing operations are combined in one. The belt is used on a crowned, contoured or rounded-edge wheel or with a shaped back-up support. Work application is either by machine or by hand. The latter is shown in the illustration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 4691

TROMBETTA SOLENOID CORP.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SB-373 SHOE BRAKE
10" WHEEL, 5" Face, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE CAPACITY 3 to 24,000 FT.-LBS.

AVAILABLE IN SPRING SET OR MAGNETICALLY SET WITH OIL IMMERSED AND EXPLOSION PROOF SOLENOIDS

EIGHT LINES OF SOLENOIDS, RECIPRÓMOTORS AND SEMOTORS

If you write maker identify as IEN - 4692

EFFICIENT! ECONOMICAL! ACCURATE! FAST! DEPENDABLE!

CHROMALOX INDUSTRY'S *FIRST CHOICE* FOR RELIABLE *Electric* HEAT

Economical CHROMALOX Electric Heaters can be easily installed to provide efficient "on the spot" heat at close operating temperatures in all types of installations. If you need heat for dies, molds, platens, ovens, plating baths, machine parts or any other job in your plant—check CHROMALOX Electric Heat first. Our Application Engineers will be glad to assist you.

LET US SHOW YOU how flexible Chromalox Electric Heaters can save production time and labor, reduce rejects and increase efficiency. Send for "100 Ways" booklet.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Heavy Duty Electric Heaters Advertisement, Page 11.

CHROMALOX 10-48
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 4693

BRADY QUIK-LABEL PIPE MARKERS

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy. Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
1001 S. SPRING STREET • CHIPPEWA FALLS, WIS.

If you write maker identify as IEN - 4694

New MOTOR Catalog

GET THIS COMPLETE LISTING of electric motors for every purpose. Shows motor types, construction features, ratings, mechanical and electrical modifications available. NEMA definitions and much other useful data to help you.

To get your copy, call your nearby Allis-Chalmers District Office or send coupon today.

ALLIS-CHALMERS A-357
PO Box 512
Milwaukee 1, Wisconsin
Please send me your Handy Guide to Motors (51B6052).
Name ____
Company ____
Address ____
City ____ State ____

ALLIS-CHALMERS A-C

If you write maker identify as IEN-4695

METZGAR
GRAVITY
WHEEL & ROLLER
CONVEYORS

Saves up to 70% time in loading, unloading, warehouse handling and production line flow of work at no cost for power. Portable or permanent installation. Lubricated for life. Ball Bearing throughout.

GRAVITY POWER Costs Nothing

Standard 11½", 15", 18" widths . . 5', 10' lengths. Curves 5', 8', 12', or to order. Strong ribbed rails. Ask for Folder No. 1251

METZGAR CO.
METZGAR
MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • REEL DOLLIES & END WOOD WHEELS.
417 Douglas, N. W.
GRAND RAPIDS 4, MICH.

If you write maker identify as IEN-4696

PERMUTIT "Softens"
THEIR HANDLING JOBS, TOO

This installation in the Permutit Company again demonstrates the versatility of American Mono-Rail engineering and overhead handling equipment. Every step from cleaning and etching to finished painted tank is done by a continuous "flow" operation. The system boosted production, cut handling labor, improved space utilization, reduced material damage, bettered working conditions and improved production control.

American MonoRail engineers can show you how to increase production and lower costs in your plant. Just drop us a line.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as IEN-4697

To Identify Stainless Steels

send for your Chart Today!

To more easily identify stainless steels that may have become mixed in stock—or stainless scrap—use Carpenter's new chart for segregating stainless steels. It diagrams and explains how and when to use each of 11 tests. Typical reactions are given for the nitric acid, magnet, spark, hardness, muriatic acid, sulphur spot, nickel spot, and stabilization tests. Return the coupon below for your copy now.

THE CARPENTER STEEL COMPANY
154 W. Bern St. • Reading, Pa.
Gentlemen: Without obligation please send me your new chart for identifying Stainless Steels.
NAME _____ TITLE _____
(Please Print)
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN-4698

JACK . . Double-piston hydraulic for pushing and pulling, rates 30 ton

Source: OWATONNA TOOL CO.
371 Cedar St., Owatonna, Minn.

Springs promote return

New size has been added to the company's hydraulic jack, previously described IEN-4738-51. The line now includes two units rating 17½ and 30 ton respectively. Both are designed to operate from a hand or power-driven pump, the latter with remote control.

The jack applies in any position for pulling and pushing operations. Overall dimensions are 7½ by 3 by 6¾ inches. Ram travel measures 2½ inches. Attachments are available for construction equipment and for plant maintenance.

If you write maker identify as IEN-4699

CONDUCTOR . . Plastic insulated copper wire, need not strip to solder

Source: REX CORP.
49-53 Lansdowne St., Dept. N, Cambridge 39, Mass.

Plastic melts at soldering heat

Nonstrip Microwall trade names a new insulated copper wire that can be soldered directly to terminals without removing the insulation. Type JR employs copper insulated with a polyamide. Type FJR adds a wrap of thermoplastic-type marker threads and a polyamide jacket. The smallest size, Type JR, No. 32, has an insulated diameter of 0.015 inch. Finished diameter of the same type FJR is 0.026 inch. The insulation is resistant to reactive atmospheres, mild acids, hot oil, potting compounds, varnishes, solvents. Operating temperature range is between minus 50 and plus 125 deg. C. Circuit rating is to 200 and to 1,000 volt ac.

If you write maker identify as IEN-4700

VALVE . . Solder type gate design, 125 lb. steam pressure, ½ to 2 inch

Source: MUELLER BRASS CO.
1923-27 Lapeer Ave., Port Huron, Mich.

The body, the threaded bonnet and the wedge-type disc gate are made of bronze in this new Streamline valve. The stem, stuffing box, packing gland and packing nut are brass. The hand wheel is aluminum. The stem is non-rising design. Height measured from the center line of the body to the top of the hand wheel is 3¾ to 7¾ inches. Body length is 1¾ to 4½ inches. Weight is a little under 1 to 7½ pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4701

Strong - Sturdy
TRUSCON INDUSTRIAL STEEL DOORS

These strong durable units are practically indestructible. They are particularly adaptable for use in basements, rear entrances, boiler rooms, fire exits and similar locations in factories, hotels, apartments, schools, churches, shops, warehouses, filling stations and stores. Swing Type Doors are furnished with heavily reinforced pressed steel door frames, prepared for Truscon standard door hardware.

Truscon Swing Type Steel Doors

Stiles and rails are made of pressed steel tubing with continuous lock seam. All corners are carefully fitted, substantially reinforced, and welded solidly. The large size of the 16 gauge tube, 1¾" x 5", provides approximately 14' of continuous welding around the perimeter—thus insuring permanent rigidity and complete elimination of sagging.

Swing doors may be equipped with either lever latch or cylinder lock hardware. Slide doors have hasp and staple hardware.

Truscon Slide Type Steel Doors

FREE BOOK!

Illustrated literature gives complete details and specifications on Truscon Industrial Steel Doors. Write for it.

TRUSCON STEEL COMPANY
1094 ALBERT STREET • YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation

If you write maker identify as IEN-4702

New di-acro POWERSHEAR

offers CONTINUOUS ACTION plus VARIABLE SPEED from 30 to 200 strokes per minute

For high Speed
DIE-LESS DUPLICATING

The new Di-Acro POWERSHEAR has remarkable speed and accuracy for the production of small parts and pieces. Consider these points: 1. CONTINUOUS SHEARING ACTION—no clutch to engage! Feeding speed determines shearing speed. 2. VARIABLE SPEED—cutting cycle quickly set for each shearing operation. 3. EASE OF OPERATION—fatigue is reduced, accuracy increases, production soars. 4. "SINGLE STROKE" SHEARING—non-repeating safety clutch for jobs not adaptable to continuous shearing.

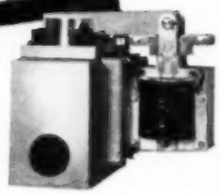
Any plant doing high speed precision work on smaller parts from any shearable material cannot afford to be without the DI-ACRO POWERSHEAR. Available in 12" and 24" shearing widths, capacity 16 gauge sheet steel. Also standard model.

SEND FOR 40 PAGE "DIE-LESS DUPLICATING" CATALOG giving full details on Di-Acro Powersheers, also Di-Acro Benders, Brakes, Rod Parters, Rollers, Notchers and Punches.

di-ACRO DIE-LESS DUPLICATE
O'NEIL-IRWIN
318 8th Ave. Lake City, Minn.
NOTCHERS | PUNCHES | BENDERS | BRAKES | ROLLERS | SHEARS | ROD PARTERS

If you write maker identify as IEN-4703

High Pressure SOLENOID VALVES . . .



have working pressures range as high as 3000 psi. Specifically designed for remote push button control of hydraulic systems, as well as for the handling of any non-corrosive fluids. Poppet construction eliminates leakage. Impregnated coils are oil and moisture resistant. Unit can be mounted in any position. Available in 110-220 A.C.

WRITE FOR OUR ENGINEERING COOPERATION AND FURTHER DETAILS

WATERMAN Engineering Company
725 CUSTER AVENUE — EVANSTON, ILL.

If you write maker identify as IEN-4704

EYE LEVEL CHECK
ON BOILER WATER LEVELS

Positive, constant check on boiler water levels is now possible at eye level—right on the instrument panel or other convenient location.

Yarway's Remote Liquid Level Indicator is always accurate because it's operated by the boiler water itself. No stuffing boxes. Indicating mechanism is never under pressure.

Ideal for indicating boiler water level, feed heater water level, superheater pressure differentials and tank levels. For complete description and operating details, write for Bulletin WG-1821.

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY
REMOTE LIQUID LEVEL INDICATOR

If you write maker identify as IEN-4705

CLAUSING

18" HEAVY DUTY DRILL PRESS

...FOR BETTER HEAVY DUTY DRILLING

Get these important new drilling advantages with a Clausing 18" Drill Press. The 6½" spindle travel gives bigger job capacity, permits better use of production chucks. Drilling capacity: ¾" in steel, 1" in cast iron. Spindle nose is No. 3 MT. There's 6" to 15" *more* capacity from spindle to table. Spindle is bigger, stronger—handles larger tools. Exclusive vernier control provides .001" depth accuracy. Positioning mechanism saves set-up time—moves *both* head and table. Massive construction, precision-machining throughout, and the smoothness of 5 ball bearing races insure exacting accuracy on every operation. Contact your Clausing distributor, or write for catalog.

CLAUSING DIVISION

ATLAS PRESS CO., 591 N. Pitcher St., Kalamazoo, Mich.

If you write maker identify as IEN-4706

Get 19" Lift from 2½" Clearance!

SIMPLEX RATCHET LOWERING JACKS

Lift or Lower Notch-by-Notch—Cannot be Tripped

With Simplex Ratchet Lowering Jacks a minimum of toe clearance is required—and only Simplex Jacks provide equal lift capacity on toe or cap. In fast jacking action, all-purpose utility, extra safety features and rugged strength for longer life, Simplex Ratchet Lowering Jacks give you more for your money! Capacities of 1½ to 35 tons. Write today for Bulletin: Industrial 49.

SAFETY SUGGESTION—Use thin wood block—don't lift or lower steel against steel.

Simplex LEVER · SCREW · HYDRAULIC Jacks

TEMPLETON, KENLY & CO.

1012 S. Central Avenue • Chicago 44, Illinois

If you write maker identify as IEN-4707

More SAFETY ROUND SHANK TYPE HOLDER

With the knurled shank designed to permit a firm, positive grip, the Model RS Type Holder is made of Mecco Safety Steel to eliminate mushrooming and spalling. The type is interchangeable, and the holder can be made for either one or two lines of type. Includes patented snap slide for quick changing of type.

Write for literature.

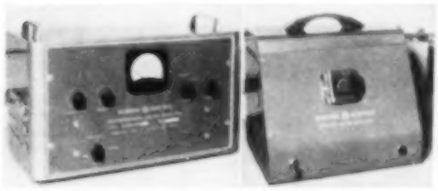
M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS

99 East Carson Street • Pittsburgh 19, Pa.

If you write maker identify as IEN-4708

TESTING . . Portable detectors to read concentration of mercury vapor

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Primarily for worker protection

New designs are announced by the company for both its electronic and chemical mercury vapor detectors, as shown respectively to the left and right in the illustration. Both are intended for use by manufacturers of electrical equipment, lamps, glassware, fur, salt, rubber and by the chemical, metal-mining and smelting industries to warn against harmful concentrations.

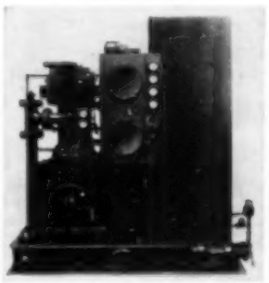
The electronic instrument provides instantaneous indication of vapor by resonant absorption of ultraviolet energy. It reads in a range from 0.01 to 3.0 milligrams of mercury per cubic meter of air on accuracy within 5 per cent. It connects to a 110-volt ac. line. It employs a phototube in a bridge circuit that measures visible light and maintains bridge balance even though line voltage may vary.

The chemical mercury detector employs activated selenium sulphide deposited upon a thin sheet of paper. The sulphide darkens in the presence of mercury that may be in the air passed over it by a motor-driven blower assembled in the housing. This blower maintains constant positive air flow over the indicator paper. A thermoswitch and heater hold the air sample constant to provide a steady reading.

If you write maker identify as IEN-4709

PROCESSING . . Oxygen generator in range from ½ to 12 ton per day

Source: JOY MFG. CO.
452 Henry W. Oliver Bldg., Pittsburgh 22, Pa.

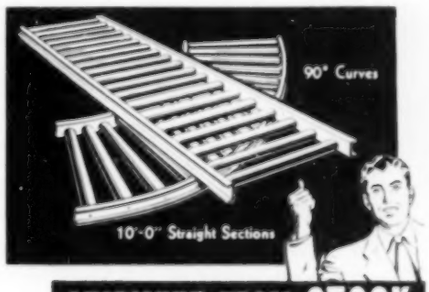


Oxygen as you need it

Liquid oxygen of 99.5 per cent purity is produced by this new self-contained engine-driven generator. It employs a compressor and a series of reversing heat exchangers that take the place of chemicals normally employed for purification. The equipment will produce the oxygen at an operating cost of 5 to 10 cents per hundred cubic feet which is equivalent to $10 to $24 per ton. By making the oxygen as it is required in the user's own plant, no transportation charge is involved.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-4710



SHIPMENT FROM STOCK

What are your needs in stock roller conveyor? Offered in several sizes for average duty conveying. Roller spacing 4" or 6" centers. Roller lengths of 12", 16" and 20". Capacity 75 lbs. per ft. with supports on 10'-0" centers and 380 lbs. per foot with supports on 5'-0" centers. Both stationary and portable supports available. Write for literature.

Check your needs today

Logan Conveyors
LOGAN CO., 274 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN-4711

FLOOD WATER? Micromax Controls May Help Solve PH Problems

When a river is contaminated by flood or chemical waste, or when anything else happens to upset the pH of a plant's raw-water supply, many mills find that Micromax pH Controllers are a big help in keeping the upset from reaching their finished water.

For, in an emergency as at all other times, a Micromax can free the water plant from an enormous amount of manual work, and at the same time give the manufacturing departments a clear well of far more uniform water than most operators can supply under manual control.

An L&N engineer will gladly supply technical information.

LEEDS & NORTHRUP COMPANY, 4949 STENTON AVE., PHILA., PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad N-96(4b)

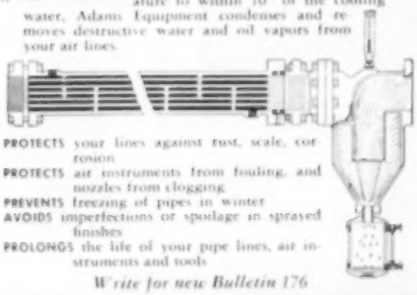
If you write maker identify as IEN-4712

You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons removed in 1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS** Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN-4713

BLAW-KNOX GRATING

Electroforged into rigid, one piece panels.

Twisted cross bar prevents slipping.

...GIVES BETTER SERVICE ON 5 COUNTS

1 SAFER FOOTING
2 GREATER STRENGTH
3 LONGER LIFE
4 LOWER MAINTENANCE
5 MORE OPEN SPACE

Bring your open steel flooring problems to Blaw-Knox for expert help. Bulletin 2365 sent on request.

BLAW-KNOX DIVISION of Blaw-Knox Company
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.

BLAW-KNOX Electroforged® STEEL GRATING

If you write maker identify as IEN-4714

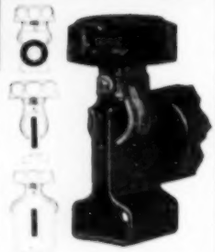
If you write maker identify as IEN-4715

You Can Stop
- UNNECESSARY FUSE BLOWING
- BURNT FUSES AND CLIPS
- UNNECESSARY SHUTDOWNS
- WASTED KILOWATTS
- FIRE AND ACCIDENT HAZARDS

With A Small Money-Saving Investment In

TRICO KLIPLOK CLAMPS FOR FUSE CLIPS

"Lock" Like A Vise"



Thousands of satisfactory installations have PROVEN their value. Users everywhere say, "They are worth their weight in gold"— Your Kliploks are everything you claim for them. "—Use them on old equipment to stop existing trouble . . . on NEW before trouble starts.

TRICO "Kliplok" TEST CLAMPS
Handy for Temporary connections

Clamp flat or round objects. Carry heavy currents. Attached in a jiffy. 7 sizes 0 to 300 Amps.
WRITE FOR BUL. NO. 7

There's a type and size "Kliplok" for every style fuse clip.
WRITE FOR BUL. NO. 6

TRICO FUSE MFG. CO. Milwaukee, Wis.

If you write maker identify as IEN-4716

CRANE WHEELS AND WHEEL ASSEMBLIES

INSTALL THESE WHEEL ASSEMBLIES complete with axles, bearings, drive gears, grease fittings and all necessary parts for a complete installation. There are sizes, types, and styles of mounting to suit every requirement.
DOUBLE FLANGED WHEELS range in standard tread diameters from 7½" to 24". SINGLE FLANGED WHEELS from 4" to 8". Wheels are available unmounted or in completely assembled units.
WRITE FOR CATALOG — Complete line of Downs Crane Wheels and Assemblies are illustrated and described in new Catalog No. 3340. Specifications included. Write today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS 540 W. VERNON AVENUE LOS ANGELES 37, CALIF.
Electric Cranes • Hand Cranes • Jib Cranes • Sheaves • Sheave Blocks • Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane End Truck Units • Jib Crane Fittings • Automatic Mechanical Load Brake Crane Hook Blocks

If you write maker identify as IEN-4717

PRESS . . Hand operated cam design rates 12 ton on 150 lb. pull at 4 feet

Source: LESLIE WELDING CO.
2941 W. Carroll Ave., Chicago 12, Ill.

Keeps tools in line

The upper head of this new press is connected through a flexing leaf at the rear of the assembly to maintain alignment as it is moved up and down by lever operation rotating the cam in the head assembly. This cam provides a stroke length of 7/8 in. and exerts 12 ton of downward pressure with 150-lb. pull on the lever at 4 ft. from the pivoted center. Means for alignment holds the operation within 0.0001 inch. Die space measures 5¼ inches. Bench space to mount the press measures 11 by 18 inches.

If you write maker identify as IEN-4718

TESTING . . X-ray films for non-destructive testing, analysis

Source: ANSCO
38-42 Charles St., Binghamton, N. Y.

Ask for 4-page X-ray film folder

Four X-ray films are included in a new line developed particularly for industrial use with low or high-kv. X-ray exposures or with radium or cobalt gamma radiation. Superay A is a recently improved film with a tough smooth overcoating to minimize abrasion, smudging and contamination. It is particularly suited to record small defects and fine structural detail. Superay B, also recently improved, is characterized by fine grain. It is used when radiographic definition and contrast are desired in preference to speed.

Superay C is a new non-screen film for high speed, moderately high contrast and good detail in routine inspection. High Speed X-ray film is included for exposures normally made with screens of the calcium tungstate type and is used with equipment of limited output or material of considerable thickness in test section.

If you write maker identify as IEN-4719

HANDLING . . Forged steel tong to safely handle hot or cold work

Source: ATLAS WELDING ACCESSORIES CO.
705-9 Lewiston St., Ferndale 20, Mich.

New tong has been added to the company's line of hand tools to provide a unit that can pick up and position hot work pieces, that will feed and remove work from a press or select and handle single sheets of metal from a pile. The nose can be heated and forged to required special shapes. A spring holds the jaws normally open.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4720

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate fibre, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

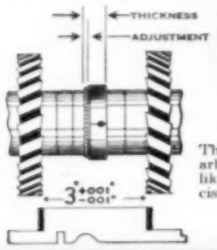
WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTED IN 125 PRINCIPAL CITIES
MANUFACTURERS OF SELF-STICKING PRODUCTS
WIRE MARKERS • PIPE MARKERS • SAFETY SIGNS • PRINTED ROLL TAPES • DECALS & STENCILS
W. H. BRADY COMPANY
1670 E. SPRING STREET • CHIPPEWA FALLS, WIS.

If you write maker identify as IEN-4721

SAVE TIME on GANG MILLING SET-UPS

Dayton Rogers *hardened and ground* adjustable spacing collars *do* save considerable time on set-ups for gang milling. After making a trial cut the cutter arbor nut is loosened and the necessary plus or minus adjustment is made with a handy wrench which is furnished. Collars are graduated in increments of .001".



They are stocked for cutter arbors from ⅝" to 2". You'll like the speed, the precision, and the time saved!

Write Today For More Information!

DAYTON ROGERS Manufacturing Company
2836 13th AVE. S MINNEAPOLIS, MINNESOTA

If you write maker identify as IEN-4722

MARMAN clamps — Solve Difficult Hose, Duct, or Tube Fastening Problems!

Marman has engineered a series of standard clamps that will fit most all applications regardless of their specialized or exacting nature. You can save time and money with Marman Clamps because they go on fast, hold tight, and seal positively.

MARMAN UNIVERSAL CLAMPS
provide quick installation and a wide range of adjustment. They can be used over and over again.

MARMAN T-BOLT CLAMPS
give extra strength with an even circumferential take-up which assures an efficient seal.

MARMAN QUICK COUPLER CLAMPS
have a patented quick opening tension bolt. They are especially designed for installations that require frequent removal for cleaning or maintenance.

Marman Clamps are made from corrosion-resistant stainless steel and are available in various standard widths and diameters. All Marman T-Bolt and Quick Coupler Clamps are supplied with AN365 nuts unless otherwise specified. Whatever your hose, duct or tube fastening problem, Marman Clamps can solve it better, faster and easier.

WRITE DEPT. I-5 for more information about Marman Clamps

MARMAN PRODUCTS CO., INC.
940 WEST FLORENCE AVENUE INGLEWOOD, CALIFORNIA

If you write maker identify as IEN-4723

SIMPLIFY EQUIPMENT CONTROL WITH Ledeen CYLINDERS

For straight line power movement. Air, oil or water operation. Medium Duty, Heavy Duty, and Super Duty models.
Write for Bulletin 500.

Ledeen VALVE ACTUATORS

For actuating any make, size and type of valve, against any line pressure, on any fluid medium, and with any pressure available. For on-and-off or positioning service. Positive in action, economical in cost.
Write for Bulletin 512.

Ledeen VALVES

For actuating air or hydraulic cylinders. 14 different models for 5 different cycles, in 6 sizes. Hand, foot and power operated.
Write for Bulletin 510.

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as IEN-4724

Parker-Kalon GROUND THREAD Socket Set Screws

SET RIGHT with SHOP MEN

RIGHT START
Quick starting. Speed assembly work and improve production.

RIGHT FINISH
Made from hardened stock. Smoothness of a true ground finish.

RIGHT FIT
Free from nicks, burrs and tool marks. Dependable Class 3 Fit.

RIGHT BUY
More for the money — quality — in performance.

SEE FOR YOURSELF!

Send for Samples. Notice how much smoother (and easier starting). P-K® Quality Controlled Socket Set Screws are, the way they "set up" to dependable security. Once you try 'em, you'll use them regularly — to speed assembly work. Write for samples. Parker-Kalon Corp., 200 Varick St., New York 14, N. Y.

P-K

PARKER-KALON®
cold forged
SOCKET SCREWS

*TRADE MARKS REG. U.S. PAT. OFF.

Size-Marked Socket Head Cap Screws • Ground Thread Socket Set Screws
Flat Head Socket Cap Screws • Stripper Bolts • Pipe Plugs • Hex Keys
Available Everywhere Through Accredited Distributors

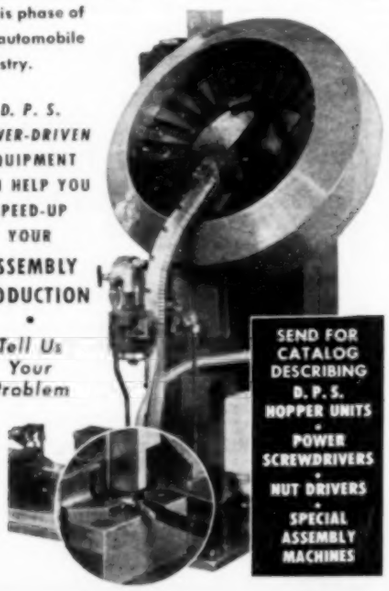
If you write maker identify as IEN-4725

Here's another Instance where D.P.S. MOTORIZED

HOPPER UNITS

are proving A HIGHLY PROFITABLE INVESTMENT!

Pictured is a special D. P. S. machine designed to insert and crimp into place the terminal contacts on the ends of spark plug wires used in the automobile industry. By using a motorized Hopper Unit, it entirely eliminated the fatiguing manual work of placing the terminal on the wire by hand, and inserting it into a small press to provide the crimping operation. Through the automatic selecting and feeding of the brass terminal clips, the machine's output is governed only by the operator's dexterity in inserting the wire in the nest and pushing an electric foot switch. The machine eliminated what was formerly a bottleneck in this phase of the automobile industry.



D. P. S. POWER-DRIVEN EQUIPMENT CAN HELP YOU SPEED-UP YOUR ASSEMBLY PRODUCTION

Tell Us Your Problem

SEND FOR CATALOG DESCRIBING
D. P. S. HOPPER UNITS
•
POWER SCREWDRIVERS
•
NUT DRIVERS
•
SPECIAL ASSEMBLY MACHINES

DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICHIGAN

If you write maker identify as IEN-4727

PIPE FITTING . . Self-seal coupling closes on quick line disconnection

Source: E. B. WIGGINS OIL TOOL CO.
3422-26 E. Olympic Blvd., Los Angeles 23, Calif.

For fuel to a rocket

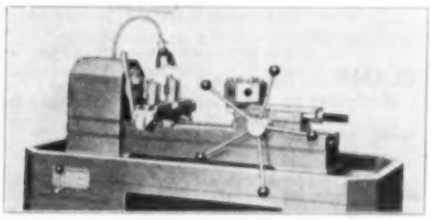
Dangerous liquids and those with corrosive properties can be handled safely by this new design of the company's self-seal coupling, previously described IEN-0606-49. Each half of the coupling is fitted with its own self-closing valve to ride flush with the ends when the coupling is disconnected. The sealing action prevents escape of liquid through either side when the coupling is disconnected. Nitric acid, titanium tetrachloride are two examples. In addition to the shut-off action the coupling is arranged so it cannot be disconnected until levers have been turned on the housing side to close both the shut-off valves.

Construction is in stainless steel in pipe sizes measuring ¾ and 1¼ inches. Temperature range in which the unit will operate satisfactorily is between 65 and 400 deg. F.

If you write maker identify as IEN-4728

LATHE . . Hand screw machine swings 10 in., takes 1⅜ in. stock

Source: GLOBE HEAT-SEAL INC.
3384 S. Robertson Blvd., Los Angeles 34, Calif.



For bar stock and secondary operations

Two-speed motor rating 1 hp. is provided with reversing control and is connected by twin V-belts to the roller-bearing spindle in the headstock of this new hand screw machine. A four-position gear box provides 16 spindle speeds between 184 and 3,800 rpm. Headstock bearings are sealed. The spindle carries a No. 5 Morse taper and has a 1⅞-in. through hole. It takes bar stock to 1 in. with a bar-type collet closer and to 1⅜ in. using a nose-type closer. The former is supplied as standard equipment. Bed length measures about 40 in. overall. Length to the headstock is 31½ inches. Spindle nose to turret face is 18⅞ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4729

RUEMELIN *Blast Cleaning* CABINETS

RUEMELIN Blast Cabinets are practical for a great variety of cleaning operations. They are extensively used to remove heat-treating scale and to clean sub-assemblies in metalworking shops, foundries, aircraft factories, etc. Built in many sizes. Furnished complete with dust control equipment. Write for Bulletin 32-B.

RUEMELIN MANUFACTURING CO.
2043 N. PALMER ST. • MILWAUKEE 12, WIS., U. S. A.
Manufacturers and Engineers SAND BLAST AND DUST *COLLECTING EQUIPMENT, WELDING FUME COLLECTORS

If you write maker identify as IEN-4730

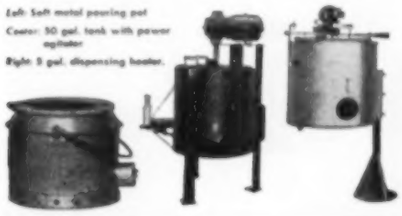
For electrically heated compound melters, THE FIRST PLACE TO INQUIRE IS STA-WARM

There's a world of difference in various methods of melting compounds . . . *and in various makes of compound melters.*

Leading the field is Sta-Warm, with a wide variety of models and sizes, with a basic design that is highly efficient and proved satisfactory, with "know-how" to solve unusual compound melting, dispensing and conveying problems.

Ask Sta-Warm today for practical recommendations.

Left: Soft metal pouring pot
Center: 50 gal. tank with power agitator
Right: 5 gal. dispensing heater.



Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN-4731

Saves Time on deburring, facing, chamfering, center drilling, reaming operations . . .

Designed to speed tube, pipe, and rod end-finishing work of any size or length up to 2" diameter. Has a new-type chuck and clamping unit, automatic swing-type stock stop, interchangeable jaw inserts, multiple tool holders, precision spindle bearings, ½ hp. motor, 8-speed sheave. Portable, weighs only 170 lbs. Fast, easy to operate, has quick change-over features. Forward movement of operating lever, clamps piece, removes stock stop, feeds work to cutters. Operator always has one hand free for loading. Saves time. Typical production: 400-500 tube ends per hour. Speeds output.

Write for Free Bulletin

PINES ENGINEERING CO. Inc.
632 WALNUT AURORA, ILLINOIS

Get more facts today on this new cost-cutting tool. Larger models up to 5" capacity also available.

For long-run work ask for data on semi-automatic models with foot switch control.

If you write maker identify as IEN-4732

NEW!

Black & Decker ¼" Heavy-Duty HOLGUN® only $44.00

NOW . . . INDUSTRY'S MOST FAMOUS ELECTRIC DRILL IS FINER THAN EVER! This brand-new BLACK & DECKER HOLGUN has 25% *more power* with a new B&D-built motor that *can't be stalled* at rated capacity—a new handle shaped for plenty of finger room — husky, high-quality parts to make it really *heavy-duty* — light weight (3¼ lbs.) to cut fatigue — compactness that's unmatched for close-quarter drilling. See your nearby B&D Distributor for a demonstration of features that save you money, muscle and man-hours! WRITE FOR FREE LITERATURE TO: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

*Trade Mark Reg. U. S. Pat. Off.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker
PORTABLE ELECTRIC TOOLS

If you write maker identify as IEN-4733

SYNTRON

Test Sieve Shakers

Give You— fast, efficient sizing of test samples

- Use standard 8" Screen Scale Testing Sieves.
- 110-60 AC Operation.
- A reset timer for accurately timed test periods.
- Controlled electro-magnetic vibration—no motors, pulleys etc.

Write for Free Descriptive Bulletin.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN-4734

Ceiling Mounted-Sidewall Mounted

or in normal horizontal position

Wagner STEEL FRAME MOTORS are Drip Proof

and... they're proved by years of service

Here's an open type general purpose motor that's completely drip-proof in any horizontal position, in frames 326 and smaller, because there are no openings in the frame and the endplates can be rotated 90° or 180° for drip-proof installation on walls or ceiling.

Wagner steel frame motors are available with either sleeve or *ball bearings which may be relubricated*. The motor frames are formed of heavy rolled steel, shaped to accurately center the stator core and to provide passages for ample ventilation. An internal fan moves a large volume of cooling air through these passages to carry off heat from all parts of the motor.

Wagner Steel Frame Motors are available in electrical types to meet most industrial requirements. Bulletin MU-185 gives full information. Write for your copy.

Wagner Electric Corporation

6414 PLYMOUTH AVENUE ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN-4735

Do you need this NEW 1952 catalog?

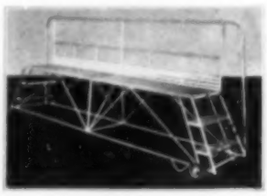
- It describes and illustrates all models Bin-Dicator bin level indicators for thin or thick walled bins, inside or outside location and suspended interior installation in tanks, silos, hoppers and bins. Also describes Bin-Flo Aerator for keeping pulverized materials moving. Many wiring diagrams. Write for this helpful new catalog.

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

If you write maker identify as IEN-4736

SCAFFOLD . . Portable platform provides elevated floor for workers

Source: BALLYMORE CO.
137-41 Pennsylvania Ave., Wayne, Pa.



To replace wood

Illustrated is a new assembly of the company's steel-tube scaffold units, previously described 3408-51, to position workers conveniently for operations such as assembling large machinery and equipment. The construction is in welded-steel tubing with expanded-metal treads and slip-proof platform made of metal plate. Each unit is built to order for length, height, width and rail.

If you write maker identify as IEN-4737

SWITCH . . Vertical adapter for Levolier light circuit switch

Source: McGILL MFG. CO.
100 N. Lafayette St., Valparaiso, Ind.

Number 84 designates a new vertical pull adapter to permit straight-down mounting of the Levolier switch so it can be concealed behind the louvers or tubes in a fluorescent lamp fixture. The adapter consists of a short extension arm that snaps over the switch lever and a slotted guide arm to maintain alignment.

If you write maker identify as IEN-4738

CLAMP . . T-slot unit designed to hold work on a machine bed

Source: ARMSTRONG BROS. TOOL CO.
5202 W. Armstrong Ave., Chicago 30, Ill.

Ask for Bulletin SUT

Clamping screw with T-handle and a swivel cup at the pressure end of this new clamp operates in a forged-steel bracket equipped with a foot and with a nut and bolt to secure in the T-slot on a machine bed. Both the bracket and the screw are heat treated. The bolt is a ⅝ by 2-in. unit complete with a nut and washer. Maximum height under the screw is 3¼ inches. Throat dimension is 2¼ inches. Designation is No. 713 in the company's line of metal-working tools.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4739

Set Screws STAY SET on REO Power Mowers since changing to... ZIP-GRIP* Self-Locking SET SCREWS

REO uses not 1, not 2, but 5 ZIP-GRIP* ON EACH MOWER

send for FREE ZIP-GRIP* Action Demonstrator

...and see why—

Zip-Grips* defy vibration, jolts, shocks . . . "Do Not Loosen in Normal Service", says Reo Motors, Inc., makers of "America's Biggest Selling Power Mowers".

The ZIP-GRIP* demonstrator shows you how ZIP-GRIP's* exclusive Contra-Thrust action together with Interference Fit provides positive self-locking effect in over 100 products.

Along with your FREE ZIP-GRIP* Action Demonstrator we will send you, without cost, an illustrated Data Sheet and an offer of Engineering Test Samples to help solve puzzling set screw applications on your products. Write for these, without charge or obligation.

PAT. PENDING

Makers of Socket and Headless SET SCREWS

Set Screw & Mfg. Co.
5 Main St. Bartlett, Ill. (Chicago suburb)

We specialize in Solving Puzzling Set Screw Problems.

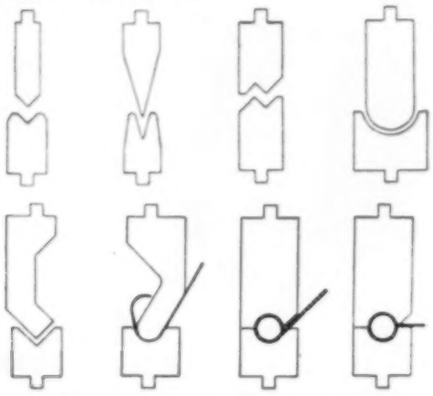
If you write maker identify as IEN-4740

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

Here are a few examples:



RAFTER MACHINE COMPANY, INC.
SINCE 1917

249 Stephens Street Belleville 9, N. J.

COLD ROLL FORMING MACHINES AND GANG SLITTERS

If you write maker identify as IEN-4741

CHECK THIS LIST OF ALL-IMPORTANT PROPERTIES Essential to Your Product:

- ✓ SURFACE PROTECTION
- ✓ HIGH IMPACT STRENGTH
- ✓ FLEXURAL RIGIDITY
- ✓ MINIMUM STRATEGIC MATERIALS

Rigidized Metals

Pattern RCC-10 welded to plain sheet

Products that must withstand rugged treatment, whether in industry or in combat — such as the electronic case illustrated above — need to be fabricated from a durable, high strength material. Three dimensional, design-strengthened, textured RIGIDIZED METALS offer you *all* the above properties in *one* metal — plus attractive appearance and light weight. A wide variety of standard pattern designs are available in all ferrous and non-ferrous metals — solid or perforated — sheet or strip for increased product efficiency.

WRITE on your company letterhead for a copy of the RIGIDIZED METALS CONSERVATION HANDBOOK — today.

U.S. & Foreign Patents

Rigidized Metals Corporation

6645 OHIO STREET BUFFALO 3, N. Y.

Offices in Principal Cities in the U. S. and Canada

CABLE ADDRESS: "RIGIDIZED"

If you write maker identify as IEN-4742

SAVE UP TO 85% ON TOOLS-MACHINERY AND PARTS!!

1952-230 PG. CATALOG

WAR SURPLUS SAVINGS

ARC WELDER 97.50

HYDRAULIC PUMP & CYLINDER SPECIALS

Special! HYDRAULIC CYLINDER 29.95

32.75

19.50

5.75

19.49

FOUR WAY VALVE 9.75

PALLEY SUPPLY CO.
Dept. IN-8
6321 SAN FERNANDO RD.
GLENDALE 1, CALIF.

If you write maker identify as IEN-4743

SEALTITE ELECTRICAL WIRING CONDUIT FLEXIBLE AND LIQUID-TIGHT

1. Sealtite* is *strong*—has a flexible steel core.
2. It's *durable*—a heavy synthetic jacket resists steam, chemicals, oil, water, abrasion, etc.
3. Sealtite is *economical*—because it reduces repairs, absorbs vibration and can be used where connections move.

Sealtite is easy to install, can be cut as you need it. Sealtite comes in all standard electrical sizes—using standard electrical fittings. It is available at your electrical supply house. The American Brass Company, American Metal Hose Branch, Waterbury 20, Connecticut. In Canada: The Canadian Fairbanks-Morse Company Ltd.

*Trademark

for **flexible, liquid-tight** electrical conduit . . . specify *

SEALTITE

AN ANACONDA* PRODUCT

If you write maker identify as IEN-4744

For AIR DUCTS and Recirculating OVENS

Needing Temperatures From 400° F TO 1,000° F

CHROMALOX

TYPE TDH Heavy-Duty Electric HEATERS

Quickly and easily installed CHROMALOX Type-TDH Heaters give efficient, dependable heat for core drying, heat treating, annealing ovens, air ducts and similar applications. Operating temperatures up to 1000° F are easily achieved and accurately maintained by thermostats. Standard units in 6 Kw to 60 Kw ratings. An Application Engineer will show you how these and other CHROMALOX Heaters give you year round service with increased efficiency at less cost. Write today for details.

IF YOU USE HEAT

Get this Useful Catalog

It's loaded with information on many of the 13,000 types, sizes and ratings of Chromalox Heating Units and Equipment.

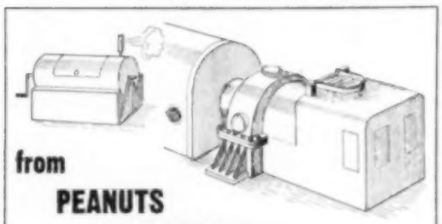
Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See *Chromalox Electric Heat Advertisement, Page 5.*

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-4745



from PEANUTS to TURBINES

From roasting peanuts to controlling huge turbines, gives a broad idea of the versatility of the Burling Temperature Controls.

Industrial furnaces, heating ovens, laboratory equipment, Burling makes instruments for most every kind of safety or temperature control.

Wide range of electric controls, pneumatic controls and valve controls available.

Burling TEMPERATURE Controls

Just published, the new Burling Temperature Control Catalog G-17 is ready for you. Send for a copy.

Burling Instrument Company

3A Vose Ave. South Orange, N. J.

Temperature Controls since 1935

If you write maker identify as IEN-4746

GRINDING . . Contact wheel supports abrasive belt on spiral teeth

Source: CARBORUNDUM CO.
1942 Buffalo Ave., Niagara Falls, N. Y.

A 14 by 6-in. unit lists at $75

Spiral teeth are integral with the rubber tire that forms the rim of this new contact wheel. Also integral is a centrally located internal flange that provides a means to mount the rim between a flanged hub and a removable side plate. The rim unit or tire can be discarded when it is worn out for replacement by a new tire at about one-half the cost of a standard new contact wheel assembly. The design represents improvement over the unit previously described IEN-5454-51.

The hub and plate will take a range of tires from ¼ to 6 in. in width and from 5 to 105 durometer hardness to permit set-up for abrasive-belt grinding under a wide variety of conditions. Each part of the assembly is separately balanced. Type T-61 is the designation.

The wheel is available for application on specified machines in 2 to 18 in. diameter and 2 to 14 in. width as in the original design. The new units list at somewhat less than the original wheel. The toothed face provides alternate support and relief for an abrasive belt to control breakdown action in the abrasive bond and thereby minimize glazing.

If you write maker identify as IEN-4747

TIMING . . Elapsed time unit accumulates closed circuit intervals

Source: MARION ELECTRICAL INSTRUMENT CO.
403 Canal St., Manchester, N. H.

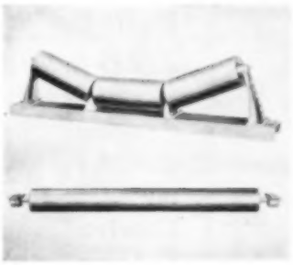
Moisture proof

New assembly of the company's running-time meter includes hermetic sealing to eliminate the chance of tampering and to assure satisfactory operation over a range of temperatures and in harmful atmospheres. The dial is visible through a tempered-glass crystal fused directly to the drawn-steel housing. The unit is available to register in 0.1-hour steps to 9,999.9 or in hour steps to 99,999. Mounting is in the same space as that for a standard 3½-in. meter.

Drive is by a synchronous motor for operation on 110 or 220-volt 50 or 60-cycle ac. The motor connects into an electric circuit for operation as long as the circuit is closed. Thus the count is a record of the accumulated closed-circuit hours.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4748



Improve Belt Conveyor Performance *WITH* **HEWITT-ROBINS IDLERS**

More features: Sturdy construction assured by Channel Base, Rigid Truss design—One-Shot Lubrication from either side—Triple Grease Seal—over-sized bearings.

Greater Selection: Full range of styles and sizes to fit every job requirement.

Trouble-free: Last longer under the rigors of on-the-job operation.

Better availability: *What* you want *when* you want it. Strategically located stocks for your convenience throughout the country.

Select the right idler for your job. Write for Bulletin No. 142

HEWITT-ROBINS HR **INCORPORATED**

STAMFORD CONNECTICUT

Hewitt Rubber Division — Robins Conveyors Division
Hewitt Restfoam® Division — Robins Engineers Division

If you write maker identify as IEN-4749

Our versatile Model PA — world's most widely used wrapping machine.

NEW SAVINGS with modern machines

You'll find that our modern packaging machines need less supervision. Production speeds are greater. Size changes are made with the simplest adjustments and most of our units can be adapted to handle any wrapping material. They're better-made, *dependable* machines!

We have developed models for packaging a great variety of products . . . Some are designed to apply overwraps at high speeds . . . Others form cartons from thrifty die-cut blanks . . . You can also bundle packages by machine, at large savings.

Benefit by our 58 years of experience—put your problem up to us.

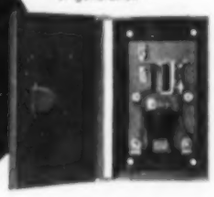
Write for leaflet "Packages that Sell"

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS DENVER LOS ANGELES
SAN FRANCISCO SEATTLE VANCOUVER WASH. TORONTO MEXICO D.F.

If you write maker identify as IEN-4750

NEW A-C WIDE RANGE CURRENT RELAY IS REACTOR TYPE, CHATTER-FREE

• A LOAD-SENSING DEVICE for safety or protection purposes in control, power generation



Bulletin 403 describes Ward Leonard's new reactor type relay for a-c circuits where currents are subject to wide variations. Current ratios up to 50 to 1 are standard, 200 to 1 on special order.

A saturable reactor is connected in parallel with a sensitive relay coil. The relay remains closed throughout specified current range—opens only when load current falls below minimum or when disconnected from reactor.

Silver-to-silver SPDT contacts assure positive make and break.

Write for relay Bulletin 403. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U.S. and Canada.

WARD LEONARD ELECTRIC CO.

Result-Engineered Controls Since 1892

RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

If you write maker identify as IEN-4751

ALL HERE ALL YOURS ALL FOR FREE

it tells you . . .

WHEN group replacement is profitable and when it isn't

WHAT is your most profitable cleaning cycle

WHERE and HOW you can eliminate 83% of your lamp burnouts

WHY you can replace six lamps for what it now costs you to replace one

MAIL THIS COUPON TODAY

Get the low down, now. The facts to fit your operation are in this Champion File Folder.

CHAMPION LAMP WORKS
LYNN, MASSACHUSETTS

Please mail your *Free File Folder D* on planned cleaning and group replacement, at no cost or obligation to:

Name _____ Position _____
Company _____
Street _____
City _____ State _____

If you write maker identify as IEN - 4752

Defense Contracts Call for Hinges? Call on STANLEY...

You just specify the hinge you want—Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers, complete research and tool-making facilities, the particular plating and finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your D. O. deadlines. Write for full information—not only on special hinges, but drawings and stampings as well—now!

PRESSED METAL DIVISION
The Stanley Works New Britain, Conn.
New York • Chicago • Detroit • Seattle
San Francisco • Los Angeles

STANLEY
Reg. U.S. Pat. Off.
HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

If you write maker identify as IEN - 4753

KEYNOTES.

Write for FREE sample today!

SEALS TIGHT... BREAKS RIGHT!

A Product of KEY COMPANY

2651 McCausland • East St. Louis, Illinois

If you write maker identify as IEN - 4754

FELT! BY THE YARD FELT! BY THE ROLL FELT! IN CUT PARTS

WE MAKE IT . . . WE CUT IT . . . WE SELL IT . . .

All grades • All colors • All textures
All thicknesses • All consistencies

WRITE TODAY FOR FULL DETAILS

THE FELTERS COMPANY

210-I SOUTH STREET, BOSTON 11, MASSACHUSETTS

Offices: New York, Philadelphia, Chicago, Detroit, St. Louis.
Sales Representatives: San Francisco, Dallas

MAKES THE FELT FOR THE PARTS IT CUTS

If you write maker identify as IEN - 4755

GRINDING . . Portable electric tool drives 4 in. disc, weighs 4½ pounds

Source: BALMAR CORP.
Clipper Road, Baltimore 11, Md.

List is $69.50

Speed is about 8,000 rpm. in this new design of the portable Diskette grinder, previously described IEN-10413-50. The new unit represents general improvement over the previous design and the addition of various attachments to extend its range of application. The aluminum housing now measures 2¾ in. in diameter by 9 in. in overall length.

Universal motor operates on 110-volt ac. or dc. It is air cooled by a fan in the housing. A dust filter cleans the incoming air. The motor and disc shaft are assembled in ball bearings. The two are connected by spiral bevel gearing. Control centers at a double-acting push-button switch.

Attachments, in addition to the three composition discs supplied with the tool, include an aluminum guard, a flexible rubber disc with an adapter to back up recessed aluminum-oxide discs, rubber pads for adhesive coated abrasive discs, a hole-burring stud, a hole-polishing stud, a collet chuck to hold files, cutters, buffing wheels, a spindle to hold rotary files, a bench stand to mount the unit in stationary position.

If you write maker identify as IEN - 4756

TRUCK . . Drum handling attachment for 1½ ton power lift truck

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.

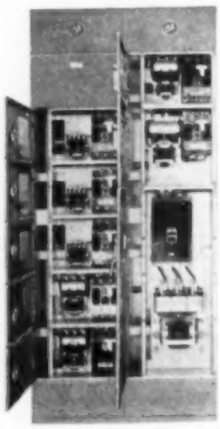
Power pick-up and release

The Tray-Hart hydraulic drum-handling attachment is now available on the company's 1½-ton Jeep truck, Model A-3444. Four drums can be pushed into loading position and then picked up for transport or for stacking by operating hydraulic controls. A compensator shifts the carrier as much as 4 in. when the lift truck is not in line with the load. Individual drums are centered as the frame is lowered into carrying position.

Lined gripping shoes carry the drums in a gravity wedging action. A load-releasing mechanism, hydraulically operated, retracts the shoes when the drums are to be released. The carrier weighs 750 lb. and measures 54 by 51 in. in four-drum capacity similar to the unit illustrated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4757



Bulletin 798 Multi-unit Control Centers for Centralized Operations

Bulletin 798 Multi-unit Control Centers can be assembled in one or more vertical sections containing starter panel units with disconnect switch or circuit breaker connected to a common power bus. The result is a completely enclosed, dead front, floor mounted switchboard, ready for connection to your motors in the plant.

Allen-Bradley Co., 1212 S. Second St., Milwaukee 4, Wisconsin

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 4758

GOV'T SPEC specialist relies on Polyken

Sealing and packaging products to government specifications is fast, safe and economical with Polyken Industrial Tapes—made by the company that makes 80 tapes meeting Government Specification JAN-P-127-Amend 3. Photo shows how A. G. Barkow Co., Milwaukee, Government Specification Specialist, uses Polyken Tape No. 214 to seal all openings on Army mobile shower unit for overseas shipment.

Write Polyken, Dept. IEK, 222 West Adams St., Chicago 6, Ill., for free booklet and samples of No. 214.

THE NEW
Polyken®
INDUSTRIAL TAPES

Polyken Industrial Tape, Department of Bauer & Black, Division of The Kendall Company

If you write maker identify as IEN - 4759

LIKE AN ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:

$86.91 if coal (9870 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (84,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.
"EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,

Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then, too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and without obligation.

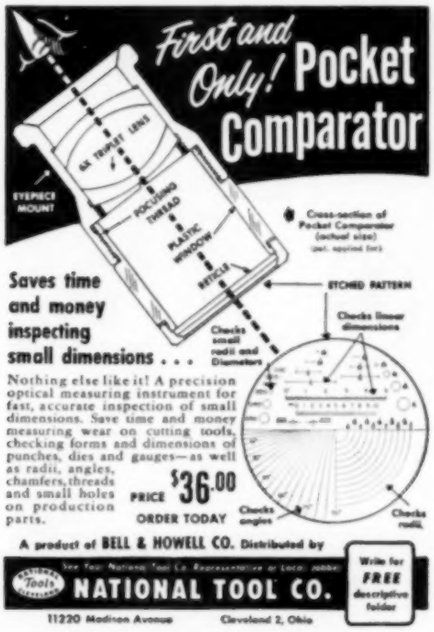
A postcard will bring him and your NEW Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-52,
250-255 Third Avenue, New York 51,

as advertised in THE SATURDAY EVENING POST

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN-4761



Saves time and money inspecting small dimensions . . .

Nothing else like it! A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00

ORDER TODAY

A product of BELL & HOWELL CO. Distributed by

See Your National Tool Co. Representative or Local Jobber

Write for FREE descriptive folder

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

If you write maker identify as IEN-4762

• MOTOR'S SHAFT EXTENDS *THROUGH* BRAKE
• ONE-HALF USUAL LENGTH • CONTAINS ONLY 6 MAJOR PARTS

The Reuland Magnetic Brake is a completely new approach in brake design.

Instead of complicated linkage, the quick acting set and release action is *directly* between the solenoid and the armature. Also, this one-piece "doughnut" type solenoid permits the motor's output shaft to extend completely through the brake, allowing full use of two power-take-off shafts, if desired. Manual release, with automatic re-set, permits hand rotation of shaft when required.

This new unit provides automatic adjustment for lining wear. Its length and weight are approximately one-half that of conventional brakes. Reuland Magnetic Brakes are available in 3, 10 and 25 foot pound continuous duty ratings—15 and 35 foot pound intermittent—and provide versatile mounting adaptability.

Write for new engineering folder No. MB-1000-8

REULAND ELECTRIC CO.

ALHAMBRA, CALIFORNIA • DISTRIBUTORS IN PRINCIPAL CITIES

If you write maker identify as IEN-4763

IT PAYS TO KNOW...

There is a Rotary Pump that will fit your job. The following features of—

VIKING ROTARY PUMPS

Will help assure you of it!

1. Simple "gear-within-a-gear" principle—only 2 rugged, moving parts.
2. Positive suction and discharge. Self priming. No pulsation. Integral relief valve on pump head if desired.
3. Sizes ranging from ½ to 1050 gpm.
4. Over 600 standard models from which to choose, plus thousands of specially engineered units.
5. Complete line of metals and their combinations to fit your needs.
6. Complete range of drive, mounting and power units available.

To staff, send for free 8-page folder 3325F today.

VIKING AN HONORED NAME IN PUMPING

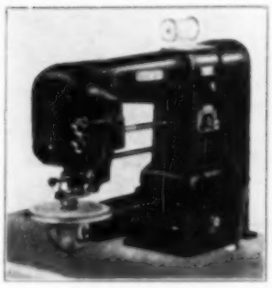
Viking PUMP COMPANY Cedar Falls, Iowa

See Our Catalog in SWEET'S

If you write maker identify as IEN-4764

SEWING . . Blind stitch machine to tack cloth labels on fabrics quickly

Source: LEWIS INVISIBLE STITCH MACHINE CO.
129-131 W. 22nd St., 1st Floor, New York 11, N. Y.



List price $595

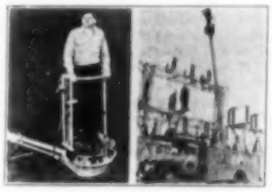
Model 160-2 is a new design in the company's line of blind-stitch machines in which a curved needle is moved through an arc. It enters and leaves a fabric on the same side so the stitch will not appear on the opposite side. The machine is designed to quickly tack labels on fabrics at a required number of points by moving a small lever to position the work. The machine completes the stitch and cuts the thread close to the work. Then it stops with the needle up out of the way.

Adjustment can be made to catch two or more piles of the anchoring fabric by turning a small knob. A thread control keeps the beginning of the thread from leaving a "tail" on the finished tack. The vibrating bar prevents the needle from cutting into the fabric. To stitch on a flat surface the work plate is kept in position as shown in the illustration. It is removed and a cylinder arm is used for work on sleeves and tubular products on which labels are desired.

If you write maker identify as IEN-4765

ELEVATOR . . Hydraulic boom rides operator in self leveling cage

Source: DONWILL CO.
833 S. E. Main St., Portland 14, Oregon



For a safe ride to work

Industrial Monkey trade names a new hydraulically - operated telescoping boom that is mounted to operate on and swivel around a structural base. The unit is designed to assemble on a 2-ton or heavier truck providing 102 in. from the rear of the cab to the center line of the rear axle. Model M will lift an operator to 33 ft. above the ground. Model ML has vertical capacity to 39 feet.

Controls center at eight foot-operated switches beneath the insulated platform. These switches can be depressed one at a time to signal, swing the rack in or out, down or up, and to make an emergency stop. On the platform is a coupler for pneumatic tools or high-pressure liquids. An air-tool oiler and an additional coupler for tools can be mounted on the guard rail.

The boom cradles in a rack above the truck cab when it is in "down" position for transporting from one location to another. In this position the ground clearance is 10½ feet. Load-carrying capacity is 1 ton when the boom is vertical. It is 280 lb. in extended horizontal position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

If you write maker identify as IEN-4766

You get the green light on production marking with a Matthews "204". This amazing unit marks round, flat and contoured parts . . . up to 800 MARKS PER HOUR!

You'll be especially interested in the "204-C" Model.

Write today for complete information and literature on the "204".

JAS. H. MATTHEWS & CO.

3948 FORBES ST. • PITTSBURGH 13, PA.

NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON N. J.

If you write maker identify as IEN-4767

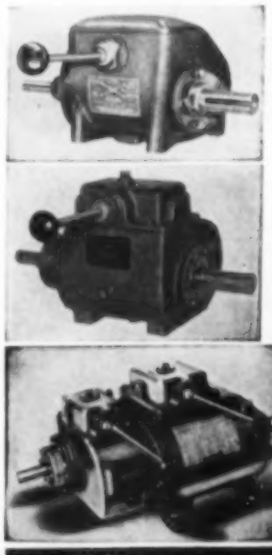


plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with input speed of 900 r. p. m. **Gear ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

8100-B (5-10 H. P.) 10 H.P. capacity with input speed of 900 r. p. m. **Gear ratios:** 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

9300 (30 H. P. capacity with input speed of 900 r. p. m.) 8 speed Changes in Geometric Progression of 1.29 (Total reduction of 6:1).

Send for catalog and complete information.

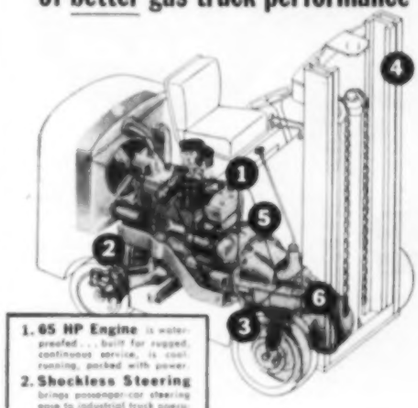
up to 50 h. p.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO. 4100 SOUTHERN DETROIT MICHIGAN

If you write maker identify as IEN-4768

Only YALE Gas Trucks give you these features... positive guarantees of better gas truck performance



1. **65 HP Engine** is waterproofed . . . built for rugged, continuous service, is cool running, packed with power.
2. **Shockless Steering** brings passenger-car steering ease to industrial truck operation.
3. **Automotive-Type Brakes** have extra braking surface, permit smoother, safer stops.
4. **Roller Carrier Uprights** reduce wear from friction, increase lifting efficiency.
5. **Fluid Drive** provides 3 to 8 times longer clutch life. Eliminates stalling. Reduces maintenance.
6. **Hypoid Gears** oil-sealed against dirt and dust, give drive 30% more strength against shock loads.

Exclusive YALE* features lick major breakdown causes

YALE GAS TRUCK users in every industry prove YALE performance claims. Features found in no other gas trucks bring savings in time, in effort, in maintenance... so YALE Gas Trucks prove to be the soundest type of investment.

Before you consider any truck, get complete facts from YALE. Your YALE representative will recommend the equipment that will do the best job for you. Get in touch with him—or fill out and mail the coupon below.

*Registered Trade Mark

The Yale & Towne Mfg. Co., Dept. 365
Roosevelt Blvd. & Haldeman Ave.,
Phila. 15, Pa.

I am interested in cutting materials handling costs.

☐ Please have your local Representative call.
☐ Please send your free new book, THE YALE GAS TRUCK.

Company_____
Name_____ Title_____
Street_____
City_____ State_____

In Canada write: The Yale & Towne Manufacturing Co., St. Catharines, Ont.

YALE & TOWNE

YALE ELECTRIC INDUSTRIAL TRUCKS • YALE WORKSAVERS • YALE HAND TRUCKS • YALE HAND AND ELECTRIC HOISTS • YALE PUL-LIFTS

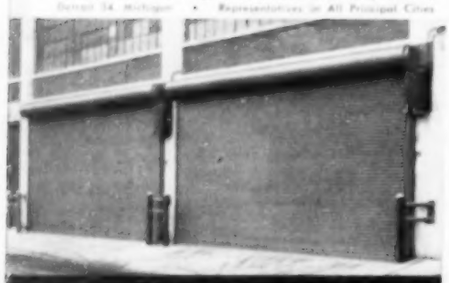
If you write maker identify as IEN - 4770

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical rolling action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities



MAHON

If you write maker identify as IEN - 4771

GAST rotary AIR MOTOR drives agitator for BONDACTOR CEMENT GUN

PROBLEM: Design to feed dry sand-cement aggregate uniformly from mixing hopper to airline of Bondactor Cement Gun.

SOLUTION: Agitate dry mixture with Gast 4 AM rotary Air Motor driven by compressor which supplies gun.

RESULT: Economy, dependability, and needed flexibility in feeding from ½ to 2 cu. yds. of concrete per hour. Unit withstands rough treatment, outdoor use by contractors.

Yes — this is another of scores of design problems solved with Gast rotary Air Motors. If rotary air power is a possibility on your product, let Gast engineers review your problem. You may profit from their concentrated experience with air power, low vacuum or pressure. Remember, "Air may be your answer!" Write for details.

Gast Application Ideas booklet — showing 26 design problems solved — sent upon request.

Original Equipment Manufacturers for over 25 years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS
GAST MANUFACTURING CORP., 338 Hubbley St., Benton Harbor, Mich.

If you write maker identify as IEN - 4772

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.

DUSTKOP 5600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

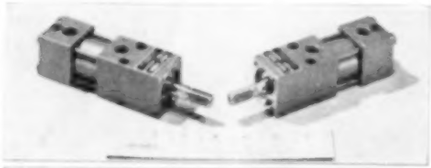
Standard, pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

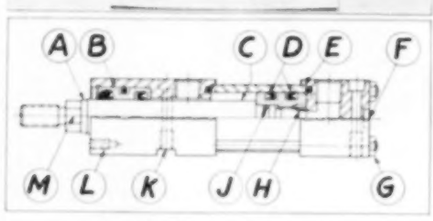
AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 4773

CYLINDER . . Miniature hydraulic particularly for jigs and fixtures

Source: HANNIFIN CORP.
1108 S. Kilbourn Ave., Chicago 24, Ill.





Illustrated details in Bulletin 112

Small size to fit in confined locations, out of the way in jigs and fixtures, is combined with adequate capacity to hold work securely in the design of this new miniature hydraulic cylinder. Three bores are 1, 1¼ and 1½ inches. The square external housing measures 1½ to 2¼ inches. Length is 5½ in. plus the specified stroke. Pressure rating is to 1,000 pounds. Application is with hydraulic pressure but lubricated pneumatic pressure can be employed.

The rod end carries a chamfer at A to assist in guiding the brass cartridge-type packing insert B into position where it is secured replaceably by a lock ring. The insert is sealed in the cylinder head by an O-ring. It carries self-adjusting Lipseal packing and a wiper ring both made of synthetic rubber to ride on the hardened rod C. The piston is sealed with two more Lipseal rings D. The cylinder is sealed to the heads by O-rings E riding in recesses machined to control compression pressure on the rings.

A centering pilot is machined in the outer head at F. Self-locking nuts are employed on the through rods. The piston is locked to the rod at H. It is sealed with the rod by the O-ring at J. A locating key slot is machined in the head at K so fitted bolts are not required. This slot registers with two bolt holes through the head, the holes carrying threads at the slot end for fastening to enter from the anchoring side. Four threaded holes are provided at L for rod-end mounting. A pair of wrench flats at M permit holding the rod against rotation. The cylinder heads are steel. The cylinder is seamless steel with honed finish.

If you write maker identify as IEN - 4774

ROOFS . . Repair instructions are given step by step in 16-page bulletin

Tropical Paint & Oil Co.
1244-48 W. 70th St., Cleveland 2, Ohio

"Saving Old Roofs" uses pictures and text to tell how to renew an old roof, how to patch holes and breaks, how to repair flashings, where to look for leaks and how to repair them. The instructions include notes on the company's materials and suggestions on their application. Please use your letterhead when writing.

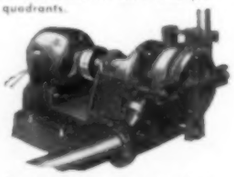
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4775

Only the New **TYPE "R" MORRIS SLURRY PUMP** *has these 4 features*

1. Gland is under suction pressure only. This feature practically eliminates packing troubles.
2. For dismantling, you need remove only four bolts. No internal studs or bolts . . . no troublesome fits or joints.
3. You can remove impeller and liner without disturbing piping.
4. Shell interchangeable for right or left-hand rotation. Suction and discharge nozzles can be rotated to positions in any of four quadrants.

The New Type "R" Morris Slurry Pump handles caustic or acid mixtures containing abrasives or solids, also ore concentrates, tailings, slag, residue from filters and classifiers.



Write for specifications and operation data on pumps best suited to your particular needs. No charge or obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

If you write maker identify as IEN - 4776

CESCO RIGHT... before your Eyes!

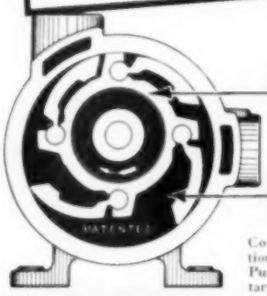
Put CESCO shields right before the eyes of your workers! They're *right* for safety—sturdily constructed with correct designing for repelling harmful objects. *Right* for comfort—with adjustable headgears formed to the contour of the head. And there's the *right* shield for every job in the wide range of styles and materials from which to choose. **Send TODAY** *for CESCO literature and the name of your CESCO safety equipment distributor*

CHICAGO EYE SHIELD COMPANY • 2336 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

If you write maker identify as IEN - 4777

LEIMAN AIR PUMPS GIVE YOU Greater Capacity!



SMALLER PISTONS provide LARGER AIR SPACE

HINGED WINGS take up their own wear

Compare this cross-section of a Leiman Air Pump with any other rotary air pump. It is the working air space that counts—and Leiman provides 2 to 3 times more area, per size and weight of pump.

Handle air pressure, vacuum or suction jobs with much smaller Leiman Rotary Air Pumps. You save weight and space—run at lower r.p.m.—have fewer moving parts—no springs, gaskets or packing—no tips to renew—nothing to give trouble. Leiman patented leak-proof hinged wings maintain fully-rated pressure or vacuum for years and years.

What is your air application?

Send us details. Leiman engineers offer over 60 years' experience with thousands of air applications.

Catalog and Application Data sent on request

For Pumps—write DEPT. A

LEIMAN Rotary AIR PUMPS (Pressure—Vacuum)

Metal Cleaning and Finishing without acids or scratch brushes

Fast, low-cost, safe, uniform!

LEIMAN SANDBLASTS

Clean up scaly, rusty, rough surfaces—prepare better surface for plating, enameling or painting—stencil letters and designs—more rapid matte or satin finishes. Use unskilled help. Many models, treadle or automatic.

For Sandblasts—write DEPT. B

LEIMAN BROS., Inc. 166 Christie Street Newark 5, N. J.

AIR PUMPS · AIR MOTORS · SAND BLASTS · DUST COLLECTORS

If you write maker identify as IEN-4779

White... Moisture-Resistant!

This new, white Bruning pencil tracing cloth lets you draw better and faster than ever before, gives you an improved drawing surface with unsurpassed *permanent* translucency for top-notch reproductions.

Here are the six reasons Brutex does a better job: 1. The super-velvet matte surface is exactly *right* for pencils of even the harder grades. 2. Translucency is clear and uniform. 3. Repeated erasures do not affect the surface. 4. It's moisture-resistant. 5. Brutex won't discolor or become brittle. 6. All qualities are *permanent!*

Get free booklet from CHARLES BRUNING CO., INC., Department B52, Teterboro, N. J.

BRUNING
Everything for the Engineer and Draftsman

If you write maker identify as IEN-4780

Better rubber products are made with Du Pont NEOPRENE

Courtesy: American Optical Company

Neoprene frame for goggle-respirator resists heat, chemicals, skin oils . . . has long life

This double-duty goggle-respirator protects eyes by a shatter-resistant lens and prevents injury to the respiratory tract by interchangeable filters and cartridges. The lens and respirator are mounted in a sturdy, comfortable neoprene frame which is indirectly ventilated to keep out chemical splash and fine dust.

Because neoprene resists heat, most industrial chemicals, perspiration, and skin oils, the neoprene frame withstands the rough usage usually given goggles of this type. These properties, coupled with neoprene's resistance to aging, mean long service life.

In hundreds of other industrial products and applications, too, neoprene serves as a resilient material that stands up where others fail. While Du Pont makes no finished goods of neoprene, your rubber-goods manufacturer or distributor will gladly tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-5, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932

DU PONT

150th Anniversary
BETTER THINGS FOR BETTER LIVING . . . *through Chemistry*

If you write maker identify as IEN-4782

GAGE . . Bore micrometer for diameters from 0.275 to 4 inches

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Providence 1, R. I.

Illustrated details in Intrimik Bulletin

Intrimik trade names a new internal micrometer gage in which a spiral track is machined on a cone to back up the three radial gaging fingers in the head. The cone forms an integral front end of the micrometer screw. It acts to move the gaging fingers outward as the screw is rotated to advance it axially. Readings are made by means of the graduated thimble and barrel graduations as in a standard micrometer.

Smallest unit in the line has a range from 0.275 to 0.350 in. in 0.0001-in. increments. The largest reads from 3.600 to 4.000 in. in 0.0002-in. increments. Individual gages are available in sets with master setting rings. The smallest of these sets includes three units in an overall range from 0.275 to 0.500 in. in 0.0001-in. increments. The largest contains six Intrimiks in a range from 1.000 to 4.000 in. in 0.0002-in. increments. Each set is packed in a wood carrying case.

If you write maker identify as IEN-4783

CLEANING . . Floor scrubbing machine washes, rinses and picks up the water

Source: FINNELL SYSTEM INC.
2600 East St., Elkhart, Ind.

Operator walks at rear

Two brushes, each 18 in. in diameter, are mounted side by side beneath the hood at the front of this new No. 218-G Scrubber-Vac. Cleaning solution is fed to the brushes for application on the floor in a path measuring 36 in. in width. Resulting sludge and loosened grease are picked up by vacuum developed by a two-stage turbine blower assembled with a water by-pass. Clean water feeds from a 20-gal. tank. Dirty water is collected in a 17-gal tank.

Drive is by a two-cylinder 9½-hp. Onan gasoline engine. It is connected by a toothed belt and operates with a clutch controlled at the steering handle. Maximum forward speed is 136 fpm. to provide capacity for cleaning as much as 16,000 sq. ft. of floor surface per hour. Starting is by pressing a button. A V-type double rubber adjustable squeegee is mounted at the rear of the machine. It contacts the floor in a 38-in. spread to leave the surface free of water. Overall dimensions are 66 by 37 by 48 inches. Weight is 725 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-4784

How to Buy the Best Gloves for the Job... At Lowest Cost!

N-54 All milled DuPont neoprene Stanzoil, heavyweight. Non-slip fingers and palm. Curved or straight finger styles.

PIONEER Stanzoils®

Smart buyers find it doesn't pay to buy one kind of glove for several different jobs, even if it's cheap. What pays is good protection for workers' hands PLUS gloves that make work easier and faster. Fit gloves efficiently to the job for more production—and new PIONEER catalog shows you how. *Unbiased advice, for Stanzoils include all kinds of liquidtight gloves:* all-neoprene, neoprene or plastic coated, 32 styles, weights, sizes, colors. You profit from scientific glove selection—write for this helpful catalog today!

Industrial Glove Division

The PIONEER Rubber Company
635 Tiffin Road, Willard, Ohio • Los Angeles

STANZOIL PIONEER

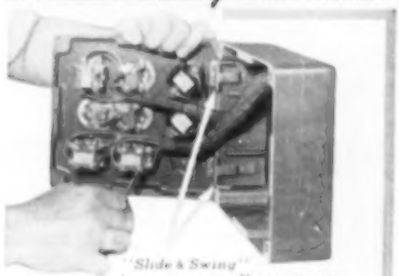
OVER 30 Years OF QUALITY GLOVE MAKING

If you write maker identify as IEN-4785

FOR Easier Wiring

Square D OIL-TIGHT PUSHBUTTON STATIONS

with "Slide & Swing" HINGE COVERS



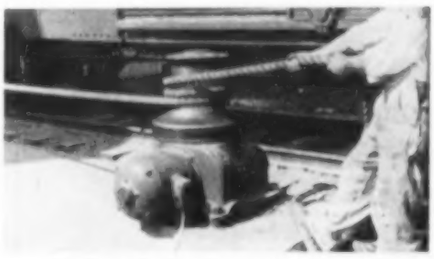
"Slide & Swing" for easier wiring. Hinge pins can be quickly slipped out to remove cover when installing units.

Write for Bulletin 9001 Type T. Address Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

If you write maker identify as IEN-4786



Here's the money-saving way to speed car handling

YOU can move cars at a moment's notice when you have a Link-Belt Car Spotter. One man, using a Link-Belt Car Spotter with motor-driven capstan, can easily move up to six loaded railroad cars at a time. Faster loading and unloading minimizes demurrage charges. Link-Belt Car Spotters are built in two sizes with 5 or 10 hp. integral or separate motors, stationary or portable.

Link-Belt's Book No. 2092 describes complete line of car spotters and drum-type pullers.

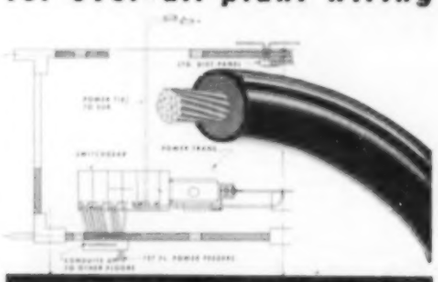
Get this NEW BOOK

LINK-BELT CAR SPOTTER

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices in principal cities. 10,468

If you write maker identify as IEN-4787

for over-all plant wiring



...OKOLITE-OKOPRENE

Keep your electrical circuits *strong*, free from weak spots which may disrupt production. For primary distribution cables, and *throughout* your plant circuits, specify Okolite-Okoprene wires and cables. Here's why:

Okolite *Insulation* stands up under heavy power loads, continuous use year after year.

Okoprene *Sheath* protects against abrasion, moisture, heat, oils and acids.

Insulation and sheath are applied by Okonite's strip process and vulcanized in a metal mold, giving greater stability and longer life to both. Write today for Bulletin IE-1055 to The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE *insulated wires and cables*

If you write maker identify as IEN-4788

Here's the Easier, Low Cost Way to Feed Bulk Material—

hot, cold, damp, dry, fine, lumpy — at rates from pounds to hundreds of tons per hour.

Variably Controlled Rate of Flow

SYNTRON "Vibra-Flow"

VIBRATORY FEEDERS

Efficient, low cost operation—due to electromagnetic vibratory principle—using no motors, gears, belts, sprockets, etc., and with adaptability to your present processing system with a minimum of change.

SYNTRON CO.
410 Lexington Ave.
Homer City, Penna.

Write for FREE Catalog Folder

If you write maker identify as IEN-4789

NOW . . . A POLISHER THAT'S UNIVERSALLY ADJUSTABLE!

Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns — such as mouldings and formed or extruded shapes.

The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

Don't hold back. Tell us about your finishing problems; we MAY have the answer to cutting YOUR costs.

VONNEGUT MOULDER CORPORATION
1627 MADISON AVE. • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN-4790

Now Spray On design layout ink

"JUST PRESS THE BUTTON ON THE CAN"

Faster! Easier!

No brush, no waste, no mess! Self-pressurized can sprays on CROWN Design Layout Ink in fine mist that dries to hard surface in a minute. Dark blue is standard—other colors on volume purchases.

ORDER TODAY!
$1.59 PER 12-OZ CAN
15% discount in cases of 48
Additional discount for larger quantities
FOB Sycamore, Illinois

CROWN INDUSTRIAL PRODUCTS CO.
402 Bordon Ave., Sycamore, Ill.
Please ship at once
_____ (how many?) cases
_____ (how many?) cases
CROWN Design Layout Ink
Name
Company
Our Purchase Order No.
Address
City Zone State

If you write maker identify as IEN-4791

SWITCHES . . Push-button design key operated, oil tight construction

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Stops tampering

Cylinder locks to mount in place of the standard operator on the company's Class 15-022 Oil-Tite push button switches are now available in two basic types. One, a selector switch, has two or three rotary positions. The other, a push-button type, can be depressed to either full or intermediate positions. The push-button unit permits the key to be removed in depressed position, in undepressed position or in both. Similarly the selector switch permits the key to be removed in any or all of its various positions.

Assembly is in a round hole in panels ranging in thickness from 1/16 to 1/4 in. without need for any extra gasket. Single or double-pole contact blocks can be mounted in the bottom of the box or on the operator.

If you write maker identify as IEN-4792

GAGE . . Bourdon tube design for temperature, pressure, weight

Source: TAYLOR INSTRUMENT COS.
60 Ames St., Rochester 1, N. Y.

See Bulletin 98214

The dial in this new gage measures 6 in. in diameter and is designed for good visibility with its white graduations and numerals on a black background. A white wedge-shaped pointer moves over the face. It is provided with a geared adjustment at its pivot point for accurate zero setting. The gage movement is made of stainless steel. The housing is die-cast aluminum designed for face or flush mounting with bottom or back connection. The bezel and case are cast with breech-lock threads for engagement or separation on about a quarter turn. An O-ring seals the interior.

Range is from minus 100 to plus 1,200 deg. F. overall for temperature applications. It is 12 to 20,000 lb. per sq. in. for pressure and is maximum at 75,000 lb. for load weighing.

If you write maker identify as IEN-4793

EXPANDING . . Of holes by ball burnishing described in new bulletin with notes on advantages

Industrial Tectonics
3682-86 Jackson Road, Ann Arbor, Mich.

Production and cost advantages are described in new 4-page Bulletin 521 for the process of sizing and finishing a hole by pressing precision hard balls through it. How the process works, size control, limitations, work-hardening effect, determination of ball size, examples of production operations are included. Company's facilities for producing carbide and alloy-steel balls in special sizes are summarized.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4794

NEW MOGUL SOLDERING AND BRAZING GUN

This new MOGUL unit is built to deposit lead and tin base solders, silver solder and brazing wires in a liquid or semi-liquid form to any constant moving part.

High or Low Speed. Moving part travels at desired speed, as Gun adjusts to your specific application.

Pinpoint Location. Deposits solder or brazing wire to exact spot for clean seam . . . material saving.

Extremely Versatile. Use Gun for constant or intermittent work of any type, regardless of shape, joints, connections, terminals or seams. Seam soldering speeds up to as much as 200 lineal ft. per min.

Saves Time • Saves Solder

Recent installation of a Mogul Gun afforded a reduction of 75% in labor costs plus appreciable solder savings. Perhaps Mogul can do the same for you. Write today for full information.

METALLIZING COMPANY OF AMERICA
Dept. IEN, 8520 West Carroll Ave., Chicago 24, Ill.

If you write maker identify as IEN-4795

Nutting FLOOR TRUCKS WHEELS-CASTERS

Fig. 16—No. 24
Steel-bound hardwood frame, extra heavy axle.

Here are two veterans of the Nutting line—proven resourceful and tough for faster material handling. These easy rolling, well balanced trucks get the job done right — on time! Your men will like to work them — and their cost per year is hardly visible.

Fig. 1136
Non-Tilting Bar Handle Truck
Capacity 2800-3000 lbs. A proven veteran for all-round service. Pressure-lubricated roller bearing wheels. Range of sizes.

Write for Junior Catalog 52-G

Nutting makes everything in Floor trucks, wheels, casters. Representatives in principal cities.

See your classified telephone directory or write direct to

SINCE 1891 Nutting TRUCK AND CASTER CO.
2613 DIVISION ST. • FARIBAULT, MINN.

If you write maker identify as IEN-4796

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

. . . and the cost is especially low because it pays for itself many times . . . saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 4798

FOR PUMPING MODERATE CAPACITIES AGAINST MEDIUM AND HIGH HEADS USE THESE TURBINE VANE TYPE PUMPS

ILLUSTRATED—Flexible-coupled standard pump

PEERLESS TYPES TVE & TVB

PEERLESS PUMPS

For pumping hot or cold clear or vaporous liquids

Write today for Peerless Pump Bulletin No. B-2205. Profusely illustrated with pictures of both standard and self-priming pump types. Also contains sectional pump drawings, elevations and dimensional data, head-capacity characteristics.

Capacity: to 56 gpm
Heads: to 800 ft
H.P. Range: to 20 h.p.

ILLUSTRATED—Close-coupled self-priming pump

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta, Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix, Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 4799

NOW—User Survey Proves These ALUMINUM Sectional Scaffolds

- Easier to erect and dismantle
- Lighter and readily moved
- Give men more "time on the job"
- Save 10% to 40% in man-hours
- Usable for many types of work

Recent nation-wide check shows ALL owners agree: "Your *aluminum scaffolds* save time and labor on every type of work—indoors and out." Others report big savings on electrical work, cleaning, repairs, maintenance and pipe fitting.

You can save! Whatever your needs, these Aluminum Rolling Scaffolds and Aluminum Ladder Scaffolds will help you to do more work *faster*—at *lower cost.*

Important: Both quick-adjustment LOKT-RING type extension legs and standard knurled nut adjustment are available.

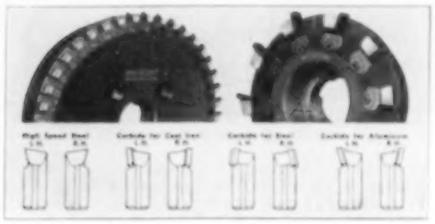
Write for free Bulletins PSS-20 and PSS-22

Gas Mask — for Greater Safety...Efficiency...Economy
LADDER SCAFFOLDING
THE PATENT SCAFFOLDING CO. Inc.
38-21 12th Street, Dept. IEN, Long Island City 1, N. Y.
West Coast Plant: 6931 Stanford Ave., Los Angeles 1, Calif.

If you write maker identify as IEN - 4801

MILLING . . Insert blade cutter, interchangeable round shank blades

Source: McCROSKY TOOL CO.
1344-74 Main St., Meadville, Pa.



Changes quickly for changing work

Only one body of a given size is required with a stock of cylindrical-shank cutters to set up this new Super-Jack milling cutter for right or left-hand rotation, for positive or negative cutting angle with high-speed steel or carbide blades. The cylindrical keyed shank in the blade construction measures ⅝ in. in diameter in standard size. The cutters are available also with ½-in. shank diameter when it is necessary to assemble a maximum number of blades in a given size of body.

Such a cutter is particularly suited for finishing work and for milling thin sections. As an example, a 10-in. mill with 40 blades operates well on cast iron at 329 fpm. and 75 in. of feed per min. with a ⅛-in. depth of cut and a chip load of 0.014 in. per tooth.

Overlapping round holes for the blade and wedge are located radially in the heat-treated alloy-steel body. The blade holes are fitted with tongues to engage a groove in the shank of each blade so it will be positioned correctly. The arrangement assures proper set-up by inserting blades of the correct design for the rotation desired and the metal being cut. A fine-pitch adjusting screw at the back of each blade permits sensitive axial adjustment. The wedges lock accurately and rigidly by application of any ordinary hexagon wrench. No hammering is required for either setting or removal.

If you write maker identify as IEN - 4802

FURNITURE . . Steel work bench, steel, Masonite or laminated wood top

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.

Detailed in Bulletin 100

Length is 4, 5 or 6 ft. over the top of this new bench. Width is 24, 30 or 34 in. and height is 30, 32, 34 or 36 inches. The bench is available in a Series 6000 with a steel top, Series 7000 with the steel covered with Masonite and Series 8000 with a laminated hard-maple top measuring 2 in. in thickness.

The structural legs are in welded, riveted and braced construction. They can be supplied to set up individual benches or to assemble a continuous row. Desired bench combinations can be specified with shelf, drawer, back and end stops.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4803

...Newest of the Safety Stars!

- ★ *BREATHING—50% easier!*
- ★ *FILTER—New "Static-Web"!*
- ★ *MAINTENANCE—25% less!*
- ★ *WEIGHT—25% less!*
- ★ *SIZE—35% smaller!*
- ★ *AIR FLOW—Counter Gravity!*
- ★ *U.S. Bureau of Mines Approval #2166 for Dust*

Meet our newest safety star! Dustfoe #55 weighs less than 3 ounces—brings you all-star comfort, performance, protection! Revolutionary "Static-Web" throw-away filter retains dust electrostatically, needs no pre-filter. Filter is 50% narrower to eliminate "blind spots." There's nothing finer on any count!

Write for Bulletin & Prices

ALL-STAR ON ALL COUNTS!

McDonald DUSTFOE #55 RESPIRATOR

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 4804

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 4805

FEDERAL Cushion Clutch PRESSES
27 YEARS OF QUALITY CONSTRUCTION

Smoother, Faster

More Accurate Operation

Federal Presses with new Smooth-Air clutch are controlled electro-pneumatically. Void of mechanical linkage. May be "inched", single-tripped, or operated continuously. Built of finest materials, working parts are carefully machined, fitted and aligned for balanced power at any operating speed. 6 to 80 tons. Write for catalog.

THE FEDERAL PRESS CO.
903 Division St., Elkhart, Ind.

If you write maker identify as IEN - 4806

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST
In addition to stopping drip and keeping floors dry.
ANYONE CAN APPLY
Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls, ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

☐ SEND NoDRIP HANDBOOK
NAME
ADDRESS
CITY STATE

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN-4807

CAMBRIDGE EXTENSION PYROMETER

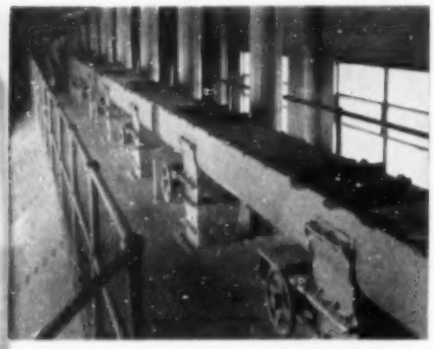
This Cambridge Surface Pyrometer is extremely useful in the Paper, Textile and Steel industries for the determination of surface temperature in hard-to-get-at places. It is accurate, dependable, rugged, quick-acting and easy to use. Other single-purpose and combination models also available for use in Rubber, Plastics, Printing, Glass and Electrical and many other industries.

Send for bulletin 194 S.A.

CAMBRIDGE
ROLL • NEEDLE • MOLD
PYROMETERS

CAMBRIDGE INSTRUMENT CO., INC.
Pioneer Manufacturers of Precision Instruments
3710 Grand Central Terminal New York 17, N. Y.

If you write maker identify as IEN-4808



SPIRAL CONVEYORS Used for feeding and handling a wide variety of materials. Makes a compact installation if you want to conserve space—no return strand. Can be made dust tight. Feel free to call upon us for consultation. Send for Catalog No. 803-B.

JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth Street, Columbia 16, Ohio

If you write maker identify as IEN-4809

COMPARE

on every count
MODINE UNIT HEATERS
stand out

Compare performance! Modine's balanced combination of discharge air temperature, velocity and volume gives you perfect heating comfort.

Compare economy! Fuel bills are smaller with Modine because heat is delivered where it's needed — not wasted at the ceiling. And installation and maintenance costs are far lower, too.

See the Modine Unit Heater line at your representative's showroom. Compare—and you'll choose Modine. Modine Mfg. Co., 1568 DeKoven Ave., Racine, Wis.

Ask for Bulletin 1400, "Modine Unit Heating." Also available — bulletins covering special applications in commercial brooder houses, greenhouses and milk houses.

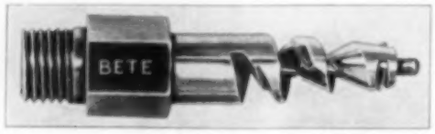
Modine UNIT HEATERS
FOR FACTORIES • STORES • GREENHOUSES • COMMERCIAL BROODER HOUSES
MANY OTHER APPLICATIONS

U-1138

If you write maker identify as IEN-4810

SPRAYING . . Spiral nozzle to extinguish, cool, lay dust, wash

Source: BETE FOG NOZZLE INC.
83-87 Pierce St., Greenfield, Mass.



Designed to prevent clogging

Series AA is a new line including six models of the company's spiral-type spray nozzle, previously described IEN-8427-51. Three flow rates are from 1 to 10 gpm. in either full or hollow-cone fog pattern. A ¼-in. male pipe-thread connection is standard with a ⅜-in. pipe thread to order. The unit is made of stainless steel to eliminate the chance of corrosion.

Operation employs the same shearing principle as in the original Fog Nozzle design in which the stream of water issuing from the housing is sheared into the spray pattern by the spiral edge that surrounds the stream and encloses a tapered shaping pin facing inward from the forward end.

If you write maker identify as IEN-4811

TESTING . . Dryer and scale read per cent moisture in a material

Source: CENTRAL SCIENTIFIC CO.
1702 Irving Park Road, Chicago 13, Ill.

List price is $200

Material sample, in ground or pulverized form and about 5 gm. in quantity, is loaded into an aluminum pan mounted on a torsion balance in the housing of this new equipment. A hinged cover carrying a 125-watt infra-red lamp is lowered over the pan and the circuit is closed. A dial indicator moves as the sample dries out and loses weight on the scale. When all of the moisture has been driven out the indicator stops and a reading is made directly in per cent of moisture.

Cenco Moisture Balance No. 29675 is the designation. Operation is on 110-volt ac. Materials that can be tested include flour, tobacco, foundry sand, detergents, dirt, food products, beet pulp. Dial graduations read in 0.2 per cent divisions between 0 and 100 per cent.

If you write maker identify as IEN-4812

ABRASIVES . . Constant relative humidity advocated in bulletin on how to store coated abrasives

Armour & Co.
452 Thomas St., Alliance, Ohio

Conditions of storage are stressed in new 8-page bulletin, "How to Store Coated Abrasives." Reasons for maintaining a constant relative humidity in the storage space are given in some detail along with recommendations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN-4813

NOPAK Model "D" Heavy Duty Cylinder provides power stroke for "squeeze assembly" operation.

NOPAK Model "E" Cylinder supplies clamping or holding power for work piece.

PRESS MOVEMENTS Powered by NOPAK CYLINDERS

Throughout industry, vital press movements are powered by NOPAK Cylinders, air and hydraulic. You'll find them on arbor presses, kick presses, punch presses, drill presses, baling presses, assembling presses, forming presses, shears, brakes, clamping devices. NOPAK Valves control the cylinder movement.

If you build presses, there is probably a NOPAK Cylinder that's *just right* for your needs. Perhaps there are presses in your plant which could be powered by NOPAK Cylinders, and controlled by NOPAK Valves, to save time, eliminate manual effort, speed up production.

GALLAND-HENNING MFG. CO., 2760 S. 31st St., Milwaukee 46, Wis.

Write for Bulletin SW-1 or refer to Sweet's File for Product Designers.

Representatives in Principal Cities

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

If you write maker identify as IEN-4814

NEW! FEATHER WEIGHT BANTAM SOLDERING IRON

PATENT PENDING

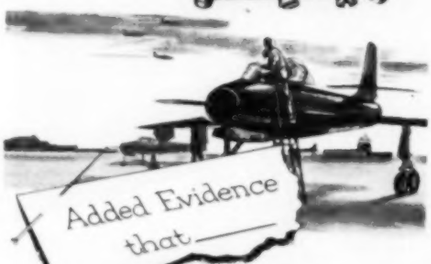
AT LAST! An iron so light, so well balanced its weight is hardly noticeable. When you pick it up, when you work with it, you'll know why HEXACON calls it FEATHER WEIGHT. It's the perfect iron for long, delicate work where fatigue works against quality. It can work for you — improving and speeding production. More comfortable and practical than a pencil iron. No transformer required. Price only $5.50.

HEXACON MODEL 30H. Weight 5½ oz. (less cord). 40, or 60 Watts. Both ⅛" and ¼" tips furnished. Ask for literature on complete line of screw tip, plug tip and hatchet irons.

HEXACON ELECTRIC CO.
188 W. CLAY AVENUE
ROSELLE PARK, N. J.

HEXACON

If you write maker identify as IEN-4815



Everyone Can Count on VEEDER ROOT

Yes, jet pilots count on this interesting instrument to tell them how much fuel is left . . . when they'd better "hit for home." And in the same way, it counts rounds of ammunition remaining in the plane's machine guns, the number of film-exposures remaining in aerial cameras, etc., etc. So you can see how one type of Veeder-Root Counter can come up with many answers to many problems. And within the literally *infinite* scope of the counting process, there may well be some badly needed answers we can work out for you . . . if your work is badly needed for defense. Write.

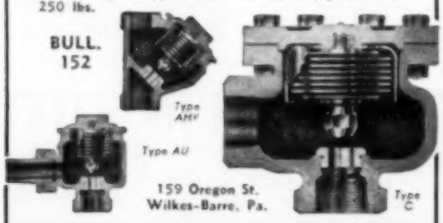
VEEDER-ROOT INCORPORATED
HARTFORD 2, CONN., NEW YORK 19, N. Y.

If you write maker identify as IEN-4817

Leading Plastic Molders

CHOOSE 'FLEXIBLE' NICHOLSON TRAPS

Because there is no need to change valves for varying operating pressures with Nicholson steam traps, they were recently adopted as standard by a large plastic molding firm. In addition to this flexibility, Nicholson traps offer these other advanced features: operate on lowest temperature differential; 2 to 6 times average drainage capacity; maximum air venting. 5 types; sizes ¼" to 2"; pressure to 250 lbs.



159 Oregon St.
Wilkes-Barre, Pa.

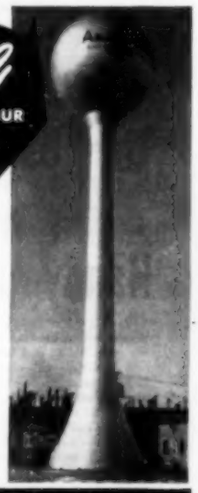
W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

If you write maker identify as IEN-4818

Be Sure

YOU HAVE 24 HOUR FIRE PROTECTION



● A Horton Waterosphere stands ready to give you 'round-the-clock-service. You get water when you need it! Consider this fact when you install or expand your fire protection system.

Horton Waterospheres are built in standard capacities from 25,000 to 250,000 gallons. When writing for estimates or quotations, please include capacity desired, height to bottom, location, and type of insurance carried.

100,000-gallon Horton Waterosphere built for Anaconda Wire and Cable Company's Anderson, Indiana plant by Chicago Bridge & Iron Company.

CHICAGO BRIDGE & IRON COMPANY

2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • San Francisco
Seattle • Tulsa • Washington, D.C.

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN-4819

How you can REPAIR CONCRETE FLOORS QUICKLY

Fill up cracks, ruts, shallow holes, uneven spots, etc., in concrete floors with Smooth-On No. 7B Quick Floor Patch Cement. The patch will harden quickly, adhere strongly to an old floor, and is ready for use as soon as it is hard.

Anyone can apply Smooth-On No. 7B by following the simple directions that come with it. The patches will stay tight, because Smooth-On No. 7B expands slightly as it hardens and wedges the patch securely in place.

Order Smooth-On No. 7B Quick Floor Patch Cement in 1-, 5-, 20- or 100-lb. size.

FREE FLOOR PATCH FOLDER AND METAL REPAIR HANDBOOK

Folder gives full information on Smooth-On No. 7B Quick Floor Patch Cement. With it we'll send you the famous 40-page Smooth-On Repair Handbook, full of time-saving, money-saving on plant and home equipment. Send now.

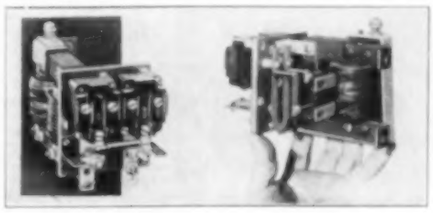
SMOOTH-ON MFG. CO., Dept. I
570 Communipaw Ave., Jersey City 4, N. J.

Do it with SMOOTH-ON QUICK FLOOR PATCH CEMENT

If you write maker identify as IEN-4820

RELAY . . Thermal magnetic unit designed for ac. motor protection

Source: ELECTRIC CONTROLLER & MFG. CO.
2704 E. 79th St., Cleveland 4, Ohio



For any ac. motor control

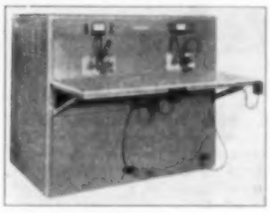
Type ZTM is a new ac. overload relay with independent thermal and instantaneous tripping elements operated from one magnetic source. The thermal element provides timed response to the thermal energy of motor-load currents by means of a U-shaped bi-metal element connected to the secondary of the magnetic circuit. Leakage flux across the poles of the magnet at the primary coil end, on short circuits resulting from faulted currents, attracts the armature to open the instantaneous contacts and disconnect the starter.

Contacts are made of silver and operate on snap action. The thermal element has automatic reset contacts with hand reset for the instantaneous element. Optional arrangement is any combination of automatic, hand or magnet reset.

If you write maker identify as IEN-4821

HEAT TREATING . . Induction machine to anneal, harden, braze and solder

Source: REEVE ELECTRONICS
613 W. Lake St., Chicago 6, Ill.



About $5,750 without tooling

Model L6F is a new two-station 5-kw. unit in the company's Reevelec line of electronic induction equipment. It was particularly designed to braze non-ferrous parts and assemblies in connection with jet engine manufacture. It can be tooled also to solder, harden, anneal and perform other heating operations on either ferrous or non-ferrous metals. The housing measures 65 by 42 by 57 inches. Weight is about 1,500 pounds.

The assembly employs air-cooled oscillator tubes, stepless control of power input at each of the two stations, individual timers and electronic contactor circuits for each station with built-in radio-frequency current transformers. The radio frequency power is switched from one station to the other by means of air-operated equipment.

Operation is on a 220 or 440-volt single-phase ac. circuit with power demand at 10 kva. on 95 per cent power factor. The company is prepared to supply the equipment for the user to tool up or with complete tooling for specified work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4822

PAGE FENCE - Since 1883

• AMERICA'S FIRST WIRE FENCE •

Defense against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN-4823

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two sizes—tapered or straight sides.

IMMEDIATE DELIVERY

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM

"Stacked and Still Accessible"

If you write maker identify as IEN-4824

Welding lots of Different pieces or lots alike...

This Positioner Increases Production... Improves Welds Cuts Rod Waste

This universal table top makes the Worthington Welding Positioner as profitable on *job* work as in mass production.

Those "T" slots make the table adaptable to any shape of work piece and a wide range of sizes. No special jigs or fixtures needed.

Result—up to 50% more footage, better welds (using higher current and heavier rods), less welding rod waste.

Welding positioner capacities from 100 lbs to 30 tons. Also: turning rolls from 3 to 150 tons, stationary or self-propelled.

Write Worthington Corporation, formerly Worthington Pump and Machinery Corporation, Dunellen, New Jersey, for bulletins or additional information. V.L.S.

WORTHINGTON

WELDING POSITIONERS

If you write maker identify as IEN-4825

When you require STAINLESS

SAVE TIME: Call FRASSE 1st

STAINLESS STEEL

BARS	TUBING	302	316	440 C
SHEETS	PIPE	303	416	430 F
STRIP	VALVES	304	430	
PLATES	FITTINGS		416 H.T.	
ANGLES	WIRE			

Peter A. FRASSE and Co., Inc.

17 Grand Street • New York 13, N. Y. • *WAlker 5-2200*

LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE

If you write maker identify as IEN-4826

Great MONEY-SAVERS where applicable . . .

Ledaloyl bearings and parts

Write for Johnson Catalog

IN the right application, they give low cost, trouble free service. Ledaloyl bearings are produced by powder metallurgy, pressed to exact shape, no machining necessary. In quantities you get extremely low unit cost. Ledaloyl can be used for small and odd shaped parts, too. Popular sizes of straight, flanged, and self-aligning bearings in stock.

JOHNSON BRONZE CO.,
476 S. Mill St., New Castle, Pa.

JOHNSON B BEARINGS
Sleeve-Type

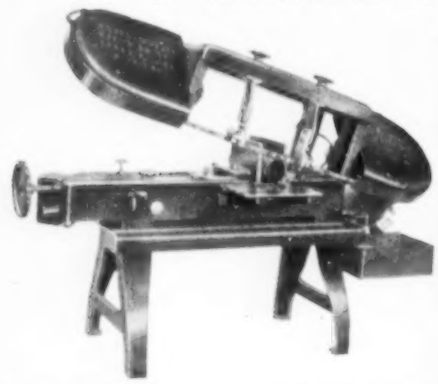
If you write maker identify as IEN-4827

The DRY SCRUBBER with the
Self-Sharpening BRUSH FEATURE

Just flip the switch! That reverses the motion of the brushes of the *Finnell* Dry Scrubber and re-sharpens them automatically. Eliminates the need for frequent changing of brushes by hand in order to maintain a good cutting edge. This heavy duty *Finnell* cleans grease-caked floors in about *one-tenth* the man-hour time required when hand-spudding, and is far more thorough. Floating brush rings enable the two powerful scarifying brushes to get into indentations and grooves that rigid coupling brushes pass over and miss. The machine is adaptable to wet scrubbing, steel-wooling, waxing, and polishing. For free floor survey, consultation, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 3601 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Pioneers and Specialists in FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN 125 PRINCIPAL CITIES

If you write maker identify as IEN-4828



For BIG Savings at little cost

. . . investigate this new Model H hinge-type saw, the economy model in W. F. Wells & Sons' line of metal cutting equipment. One-piece frame lowers hydraulically. Coolant system and other accessories available.

Send for literature today.

SPECIFICATIONS
Size 9" x 16"
Blade Size ½" x .032 x 11 ft. 6"
Floor Space 20" x 66"
Blade Travel 40, 90, and 120 ft. per minute
Swivel Vise 45 degrees in either direction
Wt. Appr. 500 lbs.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as IEN-4829

PLASTIC MOLDING . . Injection machine rates 6 ounces of polystyrene plastic

Source: IMPROVED PAPER MACHINERY CORP.
148-52 Burke St., Nashua, N. H.

Automatic when specified

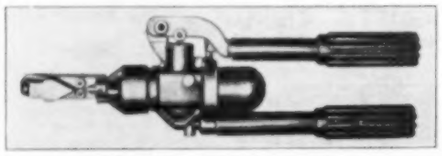
Type HA4-175 is a new nominally-rated 4-oz. injection molding machine. It can be employed for capacity to 6 oz. in connection with multiple pre-pack action. At this maximum capacity the injection plunger fills the mold with 6¼ oz. of polystyrene in about three seconds. The overall operating cycle is approximately 30 seconds when the machine is set up to mold a serving tray measuring 15¾ by 7⅛ in. and having a projected area of 108 square inches.

The forming die is controlled by a temperature regulator which holds it within plus or minus 1 deg. F. of the setting. A fast-acting clamp applies 175 ton of locking pressure to hold the die closed during injection of the molten plastic. Mold space between the tie rods measures 12½ by 13½ inches. Overall dimensions are 146 by 44 by 78 inches. The plasticizing cylinder will handle 60 lb. of material per hour.

If you write maker identify as IEN-4830

CUTTING . . Hand hydraulic tool rates ½ in. steel bar stock

Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.



Particularly for reinforcing rod

Model 200-A is a recent addition to the company's line of hand and power-operated cutters and shears. The new unit weighs 12 lb., is operated by one of its two levers to move a pump piston. The piston sets up pressure of 8,500 lb. to exert a 10-ton thrust. The cutting blades are made of tool steel. Overall length is 21 inches.

If you write maker identify as IEN-4831

GRINDING . . Operator instruction manual for surface grinding machine has trouble-shooting guide

Norton Co.
36 New Bond St., Worcester 6, Mass.

"ABC of Surface Grinding" is new 92-page pocket instruction book for the machine operator. First is an information section on general grinding hints and specific suggestions grouped by type of machine. Second is a section on wheel selection with reasons for picking a given wheel for a given job. Last of three sections is a guide on trouble shooting with a list of common faults and detail description on how to avoid or correct them.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-4832

drills 6 inches of concrete per minute

. . . gives lowest cost per foot of concrete drilled with a

tilden
ROTARY
KONKRETE KORE DRILL

Patented core slot expels cuttings automatically

U. S. Pat. No. 2506474

Two-thirds more cutting surface make Tilden 70% more efficient. Drills 5 to 7 times more holes without resharpening — even reinforced concrete. Free factory resharpening! Use with any electric or air drill. 29 standard sizes 3/16" to 4". Interchangeable shanks up to 60".

WRITE TODAY for free illustrated catalog.

SOLD BY SUPPLY HOUSES EVERYWHERE

TILDEN TOOL Manufacturing Company
309 Los Molinos • San Clemente, Calif.
Branch Office: 1146 W. Washington Blvd., Chicago 7, Illinois

If you write maker identify as IEN-4833

The Job of Sacking from Bulk to Bag Today . . . .

Although putting free-flowing materials in bags has not changed in a decade methods have. Ever increasing labor costs have forced production men to seek ways to cut costs, speed up operation, save time. In a sacking operation these objectives have been reached by filling, weighing and checking a bag in one coordinated operation with one man. EXACT WEIGHT Sacking Scales have always followed this method . . . have added one new and improved feature after another until sacking the EXACT WEIGHT way today saves more time and money than ever before . . . delivers more accurate bags . . . does the job from bulk to bag at the lowest cost in the history of the operation. Write for literature covering the latest models.

EXACT WEIGHT SCALES
Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN-4834

they call me

Handy Andy

Here's the handiest test pump for hydraulically testing pipe, valves and fittings; for operating hydraulically actuated equipment; for hundreds of other uses in field, laboratory or shop. ★ This two-stage, manually operated pump has one cylinder for low-pressure testing (up to 2,500 psi); is quickly shifted to develop up to 6,000 psi. ★ Replaces elaborate, expensive testing equipment. ★ Readily portable (weighs only 70 pounds) and with a bucket of water you can quickly and painlessly develop on-the-spot pressures up to 6,000 psi. ★ Cost's mighty little—lasts indefinitely—pays for itself long before a few inexpensive wearing parts need to be replaced. ★ For details and price address . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX
LOS ANGELES 54, CALIFORNIA

If you write maker identify as IEN-4835

SAVE TIME! SAVE TOOLS! with these ALL LEATHER TOOL KITS

Tools are handy — always in place—safe from damage—with a Western Tool Kit. Full line, many sizes and models, designed for mechanics, electricians, machinists, radio and TV technicians, etc.

For Example:

$3.75 (postpaid) *only* for Model No. 177—lineman's or electrician's seven pocket kit, 9" x 10". Made from durable, bark tanned, top grain cowhide. Worn on belt. Holds tools, pencils, tape, etc.

Model No. 701—Electrician or Metal Worker's kit. 8½" x 11". Five pockets and hammer holder. Genuine chrome leather, sturdy stitching, reinforced with rivets to last a lifetime. Worn on Belt. *Only* $2.95, postpaid.

WESTERN TOOL KITS
516 ALLEN AVENUE
GLENDALE 1, CALIF.

Gentlemen:
☐ Please send Model No. 177 Enclosed is check for $3.75
☐ Please send Model No. 701 Enclosed is Check for $2.95
☐ Please send catalog.
Name .....
Address .....
City .....

MAIL COUPON TODAY ★ MAIL COUPON TODAY

If you write maker identify as IEN - 4836

This new super 8 in. Bassick Caster Series "SK-99" meets medium-heavy duty needs with less weight and less cost than ever before available.

All the famous Series "99" features are packed in this new addition to the line . . . ¼ in. thick steel top plate; extra-heavy king pin; full-floating, double ball race construction; fully-hardened bearing surfaces, etc.

Put it to work *now* to reduce the "Reducible 30%" (materials-handling...about 30% of total cost...one of today's few *reducible* expenses). Write for descriptive leaflet, form 99-51. THE BASSICK COMPANY, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STUART SW WARNER

MAKING MORE KINDS OF CASTERS MAKING CASTERS DO MORE

If you write maker identify as IEN - 4837

● These MICRO "BAFI" precision switches combine long life and reliability with the capacity to make and break steady state currents of 20 amperes and to handle inrush currents as high as 75 amperes.

The rugged, die cast, aluminum enclosures protect the basic switching element against mechanical damage from vibration or shock and against the entrance of dust, dirt, oil or moisture.

The overtravel mechanism is built into the metal enclosure. This assures accurate repeatability of the operating point throughout the long switch life.

To provide plant engineers with the utmost versatility of mounting and actuation, these MICRO "BAFI" switches are provided with pin-plunger, roller-plunger, and roller-arm actuators and are available in either right or left hand designs.

For complete information on the characteristics and electrical ratings of these MICRO products, consult the MICRO SWITCH distributor in your community. These distributors are located in 127 cities to assist you in your plant switching problems. Look under "Switches, Electric" in your classified phone book.

MICRO SWITCH

FREEPORT, ILLINOIS

MICRO Snap-Action Switches — Honeywell Mercury Switches

A Division of Minneapolis-Honeywell Regulator Company

If you write maker identify as IEN - 4839

CLEANING . . Engine driven sweeper picks up dirt and dust, 34 inch width

Source: MOTO-MOWER CO.
4611 Woodward Ave., Detroit 1, Mich.

Dirt pan quickly removable

Two brushes rotating in opposite directions work together in the housing of this new Moto-Sweeper. The brush at the front contacts the floor, throws heavy dirt upward into the brush behind it. This second brush deposits the dirt in the hopper. Dust resulting from the operation is drawn upward by a vacuum blower connected by belt to the engine that drives the machine. The dust is trapped in a vacuum bag on the machine housing. The brush will pick up dirt, nails, refuse. It clears a path about 34 in. in width and has capacity to sweep about 40,000 sq. ft. of floor surface per hour.

The operator either walks or rides at the rear on a sulky equipped with a foot brake. He controls separate clutches by turning two levers on the handle bar for the side wheels. A turn can be made in a little more than the machine's own length. A side brush, available to specification, increases sweeping width by 11 inches. It rotates to move dirt into the path of the main brush. A hand clutch disengages it.

If you write maker identify as IEN - 4840

ELEVATOR . . Portable assembly, ¼ to 1 ton rating, pneumatic drive

Source: BARRETT-CRAVENS CO.
4609 S. Western Blvd., Chicago 9, Ill.

Platform cannot drop

Pneumatic hoist manufactured by Ingersoll-Rand is now available on the company's line of portable elevators so the equipment can be employed in atmospheres containing inflammable or explosive dusts and vapors. The hoist connects to a shop line for 80-lb. air supply. Air consumption is about 2½ cfm. per foot of lift. Lift height ranges from 4 ft. up as specified.

The elevator uprights can be supplied in hinged or telescopic designs so the equipment can be moved through doorways. Platform dimensions start at 24 by 30 in. and can be specified in required larger sizes. Construction includes a brake to hold the load in the event of air failure and limit stops for the upward and downward movements.

Control centers at a reversing valve that can be operated from the floor or from a position on the platform by means of a cable on which the limit stops are assembled. An oil chamber supplies lubricant to the hoist mechanism.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4841

YOU'LL DO BETTER WITH SHENANGO CENTRIFUGALLY CAST PARTS

HERE'S WHY . . . Shenango centrifugally cast parts offer many inherent advantages that can help you avoid trouble and save time and money.

For example, due to the centrifugal casting action, you get a more uniform, pressure-dense metal, free from sand inclusions, blow holes and other often-hidden defects. You get higher strength, greater wear resistance, better elongation—longer lasting parts, better able to withstand severe service of any kind.

So if your plans call for symmetrical shapes, anywhere from tiny bushings to huge rolls, ferrous or non-ferrous, rough or finished, check with Shenango. Compare after compare finds it a good way to do a better job at lower cost.

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO

ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN - 4842

Keep it in your machine tool file. Hannifin Standardized Hydraulic Presses Catalog contains complete descriptions and specifications on Hannifin Forcing Presses, Straightening Presses, Column-Type Presses. Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

do ALL you CAN do... with

HANNIFIN

Air Cylinders • Hydraulic Cylinders • Hydraulic Presses
Pneumatic Presses • Hydraulic Rivoters • Air Control Valves

If you write maker identify as IEN - 4843

Signode Retaining Strips are easily applied. They are economical . . . one or two strips may be all you need for adequate protection. Because they can be split at the center and draped back out of the way, Signode Retaining Strips permit walk-in and through-car loading, and the use of lift trucks and dollies in the cars. Ends are quickly joined, tensioned and sealed. These strips are made of heavy kraft paper reinforced, top and bottom, with strong Signode steel strapping. They reduce dunnage weight, and need for doorway liners, and prevent damage through doorway jamming. For details write,

SIGNODE STEEL STRAPPING CO.
2611 N. Western Ave., Chicago 47, Ill.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 4844

6 MODELS —for all wire gauges 8 to 22—Also POTS, —FM and TV down lead wires.

Easier, Faster—No Cut Fingers!... One Light Squeeze Strips Clean... Can't Crush Wire. Unique in design—unique in performance! One easy squeeze strips up to 7/8 in. Exclusive "automatic" feature holds jaws open while wire is removed — positively prevents crushing. Just insert wire, squeeze and release! Weighs only 10 oz. — fits in pocket. Blade can be changed in a jiffy! See the Stripmaster at your IDEAL Distributor's or mail coupon below.

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

OTHER WIRING TOOLS
- ☐ Voltage Testers
- ☐ Fish tape, reels and pullers
- ☐ Joist borers
- ☐ B-X cutters
- ☐ Fuse clip clamps
- ☐ Fuse pullers
- ☐ Test lites

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send free catalog information on Stripmaster and other wiring tools as checked.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 4845

air is expensive

IN THE WRONG PLACE

Air mixed with the steam in your heaters or coils is expensive because it retards heat transfer and lowers steam temperature. Remove air from steam heated machines with ***Sarco thermostatic air vents.*** Write for Bulletin 276 and the name of the Sarco man nearest you. He can help you select the best vent for your purpose and the right place to install it.

Represented in Principal Cities 502

sarco SARCO COMPANY, INC.
Empire State Building, New York 1, N. Y.
Sarco Canada, Ltd., Toronto 5, Ontario

If you write maker identify as IEN - 4846

"A Street Car Named Desire" was **FIRST** operated by a Trolley

... later it became famed as a smash hit of stage and screen. Leaving nothing to "Desire" is the

Rivetless Chain Trolley Conveyor

another FIRST by JERVIS B. WEBB COMPANY

Simple and efficient is the Webb Trolley Conveyor. Its 2 wheel trolleys are suspended on an overhead I beam track and connected by a rivetless chain which serves the double purpose of spacing and driving the trolleys. Webb Trolleys are so simple to assemble to the I beam or to dismantle that skilled labor is not required. Trolleys are arranged for pressure gun lubrication. Their triple labyrinth seal has 3 walls of steel to keep lubricant in and dirt out. Brackets are drop-forged with hardened steel wheels. Races are precision ground. Due to the lower friction with roller type bearings the life is longer. The Drop-Forged Rivetless Chain has been designed and perfected by the Jervis B. Webb Company specifically for Trolley Conveyor Systems.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
3015 ALPINE AVE. DETROIT 4, MICH. — OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

If you write maker identify as IEN - 4847

DE-STA-CO Toggle Clamps speed production on this simple, efficient wood turntable fixture for volume cementing of plastic fish-net floats. Twenty-four Model 210-U clamps are used to obtain quick clamping pressure. The rugged construction of De-Sta-Co clamps has permitted continuous use for over 2½ years producing 240 to 300 floats per hour. Completely retractable, they permit easy insertion and removal of work. De-Sta-Co's positive clamping pressure on the float parts makes a perfect bond and accurate assembly.

Select from over 40 models of De-Sta-Co Toggle Clamps for your work-holding problems in assembly, welding, bonding, machining or inspection of any materials. Positive holding pressures up to 4000 pounds.

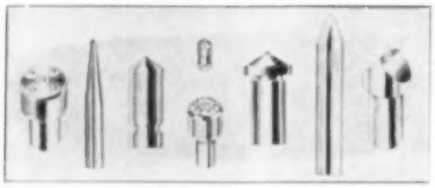
Write today for your copy of the De-Sta-Co Toggle Clamp Catalog describing more than 45 stationary and portable types.

DETROIT STAMPING COMPANY
342 Midland Ave. • Detroit 3, Mich.

If you write maker identify as IEN - 4848

GRINDING . . Diamond dresser with diamond in alloy steel matrix

Source: PRECISION DIAMOND TOOL CO.
100-4 S. Grove Ave., Elgin, Ill.



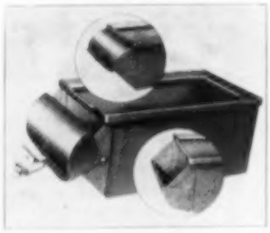
Typical shapes

The company announces development of a new alloy matrix having the same coefficient of expansion as a diamond in the construction of its line of diamond dressing tools. The matrix "wets" the diamond. It tests to 80 Rockwell B. Tests indicate the coefficient of expansion of the matrix to duplicate that of a diamond to 340 deg. F. Expansion exceeds that of the diamond by 10 per cent when higher temperatures are developed, an amount that is not critical.

If you write maker identify as IEN - 4849

STORING . . Steel parts box with hooded bin type open end

Source: STACKBIN CORP.
1077 Main St., Pawtucket, R. I.



Closes to protect work

New design of the company's bin-type box to store and handle work in process is equipped with a hinged hood over the end opening so the box can be handled on a truck or conveyor without danger of the work spilling out. The hood secures in closed position by means of a latch that releases with finger pressure. Each unit includes a flanged top into which the box above it can be rested. At the front is a slot for an identification card. Sizes range from 3½ by 6 by 3¼ in. to 15 by 24 by 11 in. in the currently available line.

If you write maker identify as IEN - 4850

DISPENSING . . Where to locate water coolers for convenience to workers is shown in new booklet

General Electric Co.
3-7 Lawrence St., Bloomfield, N. J.

Work center plan of locating water coolers in a plant or office is described in new 4-page Bulletin SP-60-2123. It includes suggestions on where to place water coolers, presents figures to bear out its statement that two coolers may cost less than one. A chart lists number of persons served in factory or office by each of five cooler types.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4851

When a touch on a button moves weldments like these into the correct, most convenient position for a down hand pass, you get more arc time, more welding at lower cost. C-F power operated Positioners rotate the work in a full circle at any point in a range of 135° from the horizontal — giving welders a choice of an infinite number of downhand welding positions instantly.

Every requirement for faster, better positioned welding — constant or variable speed table rotation, full 135° tilt, self-locking gearing which holds the table in any position, oversize built-in main tilt and rotating bearings, choice of two base styles, and many other features — are built into C-F Positioners.

C-F Positioners are available in Hand or Power operated models, and are made in capacities up to 30,000 lbs. and larger.

Write for the new C-F Positioner Catalog.

CULLEN-FRIESTEDT CO., 1310 S. KILBOURN AVE. CHICAGO 23, ILLINOIS

CULLEN-FRIESTEDT CO., CHICAGO 23, ILL. — positioned with man better more economical weld

If you write maker identify as IEN - 4852

Add Years to Air Equipment Life— Use Filtered Air

All air lines collect moisture. Rust and dirt enter the lines, too, to clog lines, and shorten equipment life.

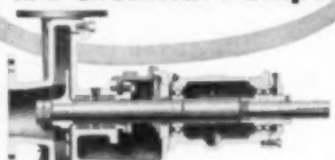
Give your air equipment top protection with Schrader Air Line Filters ahead of each air control unit. Schrader filters offer no restriction to full air flow, even after long use. Moisture is trapped in the bottom of the filter, can be drawn off through a drain cock.

See how Schrader Air Line Filters and other Schrader accessories can add to your effective use of air. Send for the Schrader catalog today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-42, Brooklyn 17, N. Y.

If you write maker identify as IEN - 4853

YOU asked for these SPECIAL FEATURES in a Chemical Pump...



1. QUICK, EASY DISMANTLING without disturbing piping or driver
2. ALL PARTS INTERCHANGEABLE except pump case and impeller. Four pump sizes fit one basic assembly
3. CORROSION-RESISTANT CATCH BASIN is integral part of pump case—protects bearing bracket and base plate from corrosive leakage
4. SIMPLE ADJUSTMENT to compensate for impeller wear

+ PLUS MANY OTHER important design advantages . . . double-protected, grease-lubricated bearings . . . stuffingbox under suction pressure . . . and extra large shaft.

...Now **BJ** brings them to You!

Byron Jackson Co.
P. O. Box 2017, Terminal Annex, Los Angeles 54, Calif.
Offices in Principal Cities

Available in four sizes, capacities to 450 gpm, heads to 100 ft. Write for details.

If you write maker identify as IEN - 4854

4 QUIJADA TIME SAVERS

FOR THREADING PIPE OR CONDUIT

1. AUTOMATIC CHUCKING — Finger tip switch chucks and releases automatically. Positive chucking.
2. QUICK OPENING DIE HEADS — Die size change is simple—fast. Save time . . . cut costs. 6 die heads with each threader.
3. CUTTER ON JAW HOUSING — Easy to make up fittings on machine. No need to remove cutter.
4. REAMS WHILE THREADING — No time wasted reaming. Flat blade reamer reams while pipe is being threaded.

SEE YOUR JOBBER OR WRITE FOR CATALOG #IES

QUIJADA TOOL CO., INC.
5474 ALHAMBRA AVE., LOS ANGELES 32, CALIF.

If you write maker identify as IEN-4855

HOW TO CONTROL GAGES AND GAGE INSPECTION

New illustrated booklet describes and shows suggested McCaskey procedures and forms designed to provide:

- Reinspection date follow-up;
- Location and condition of each gage and measuring instrument, loaned or in cribs;
- Gage and Instrument History record;
- Central clearance record of each employee's gages and instruments;
- Tool and gage inspection report;
- Gage tag, conditional release tag for tools (fixtures), and faulty tool and gage tag;
- Instrument and gage withdrawal order, etc., etc.;
- . . . all designed for complete control with speed, accuracy and minimum clerical work.

Close control of your gages, instruments and fixtures and their inspection will reduce spoiled work and rework costs . . . and improve your product quality.

Write today for your copy of McCaskey Tool and Gage Inspection Control—Bulletin A-512 IEN—showing how it can be done.

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as IEN-4856

Preferred power on cement surfacing and concrete working machines — the world's most widely used single-cylinder gasoline engine on tools, machines, appliances used by the construction industry, railroads, oil fields, other industries and on farms and farm homes.

You know you have the *right* power when the power is Briggs & Stratton — the accepted leader in single cylinder, 4-cycle, air-cooled gasoline engines.
Briggs & Stratton Corporation,
Milwaukee 1, Wisconsin, U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

If you write maker identify as IEN-4858

CONTROL . . Motor driven electronic, governs closed circuit heat intervals

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.

Note timing drive

Synchronous motor is gear connected to rotate an adjustable aluminum vane into, through and out of the field of a set of oscillator coils in this new pulse Pyr-O-Vane controller. The action stops oscillation, when the vane is in the field, to de-energize the instrument's relay and open the heating-control circuit to an oven, furnace, unit of processing equipment employing electric, oil or gas heat. Relay rating is 5 amp. on 110-volt ac. for use direct or through a load relay if more current is required.

The heating circuit recloses when the vane issues from the oscillator field and remains closed until it re-enters on the next revolution. A second vane is attached to the temperature-indicating pointer in the instrument to penetrate or leave the field of a second set of oscillator coils upon a change in temperature. The result of this movement is combined with the rotating-vane action to provide the final control.

Cycle time is adjustable in six steps between 3 and 72 sec. by changing gears in the motor drive. Action interval for the vane in the field is adjustable. The instrument is available to operate on 110 or 220-volt 50 or 60-cycle ac.

If you write maker identify as IEN-4859

CLEANING . . Washing machine directs mineral spirits at spray heads

Source: DETREX CORP.
14329 Woodrow Wilson, Detroit 32, Mich.

Loads and unloads at one end

A washing stage with storage capacity for 248 gal. of mineral spirits, a rinsing stage holding 150 gal. of water and a dry-off stage employing compressed air are combined in the assembly of this new Mineral Spirits washing machine. The unit shown in the illustration was built to clean aircraft cylinder barrels as they are carried through on a conveyor. The equipment can be supplied for other specified applications.

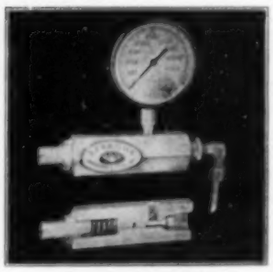
Overall dimensions are about 13 by 10 by 9 feet. The work opening is 12 by 18 inches. Production capacity is 60 to 180 pieces per hour. General design includes sloping bottoms in each of the stage tanks to assist in maintenance, liquid drain, overflow troughs and removable solution screens. Each spray line carries a pressure gage to indicate the action. Safety devices include explosion-proof switches and motors, nonferrous metals in the moving parts, exhaust and automatically-actuated carbon-dioxide equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-4860

A PAID NEWS ADVERTISEMENT BY SPRAGUE ENG'G & SALES CORP.

GAGE PROTECTOR . . . shut off valve saves gages



Gage is always Safe.

Automatically cuts out gage from system when hydraulic or pneumatic pressure goes beyond its operating limit. Automatically opens when pressure is again within operating range of gage. Available for low pressures — 30, 60, 100, 200 and 300 PSI. and high pressures — 500, 1000, 1500, 2000, 2500, 3000 and 5000 PSI. Sprague Gage Shut Offs installed in a hydraulic system with multiple gages of various ranges, save valuable man hours. They eliminate the necessity of the operator opening and closing manually operated shut off valves for the various gages in the system. Supplied with standard pipe thread connections but can also be furnished with AN adaptors for aircraft fittings. Connection to the system is made at the end of shut off, ½" pipe thread. Connection to gage is made on the side of shut off, ¼" pipe thread. Overall length 5½ inches. Body is 1½ inch hexagon stock. Finest construction. Individually tested and approved. Write today for bulletin.

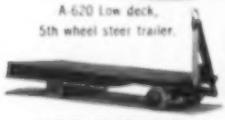
SPRAGUE ENGINEERING & SALES CORP.
Budlong Ave. at 135th St., Gardena, Calif.

If you write maker identify as IEN-4861

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer.



A-443 Die handling trailer.

A-520
Medium height, 5th wheel steer trailer.

MERCURY

In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

If you write maker identify as IEN-4862

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN-4863

Matched POWER

Typical V-type 4-cylinder model, 15 to 30 hp.

to Fit the Machine . . . and Fit the Job

HEAVY-DUTY *Air-Cooled* **WISCONSIN ENGINES**

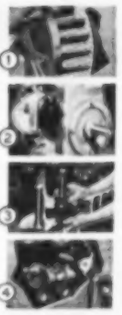
ENGINE Horsepower or steady pulling "horse power" . . . matched power still makes the difference between poor and good performance . . . power that is matched to fit both the machine and the job. Wisconsin Engines qualify.

1. No Cooling Chores A high efficiency fan, cast in the flywheel, provides footproof air cooling, under all climatic and seasonal conditions.

2. All-Weather Starting Rotary type high tension magneto is equipped with Impulse Coupling for quick, easy starting. Outside mounting simplifies servicing.

3. Bearing Protection Tapered roller bearings at both ends of crankshaft on all Wisconsin engines provide maximum protection against bearing failure.

4. Positive Lubrication Longer engine life, lower maintenance cost, smoother running from lubrication designed to match the service needs of every engine.



Write for detailed data on 4-cycle single cylinder, 2- and 4-cylinder Wisconsin Engines.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy Duty Air Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 4864

DELAVAN

TYPE WDA (HOLLOW CONE) • TYPE WDB (SOLID CONE)

SPRAY NOZZLES

For finest possible pressure atomization —available in any capacity from 2 quarts per hour to 20 gallons per hour.

There is a DELAVAN NOZZLE for any spraying requirement.

Write for Catalog No. 31

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

If you write maker identify as IEN - 4865

SURPRISING SAVINGS

Reported by Users of

STANDARD PNEUMATIC TUBE SYSTEMS

Safe — swift delivery by "AIR" of messages . . . money . . . merchandise!

Savings as high as $10,000 in 9 months' time are reported by users of Standard Pneumatic Tube Systems — filling orders, moving merchandise, money, messages, records, between departments. Reduce messenger and telephone service. Can be installed for a wide range of needs in stores, warehouses, manufacturing plants, offices. Write for Bulletin No. 11 and complete information — address Dept. IEN-52.

STANDARD CONVEYOR CO.
North St. Paul 9, Minn.

Write for Bulletin No. 11 Standard Pneumatic Tube Systems—Address Dept. IEN-52

Standard GRAVITY & POWER CONVEYORS

If you write maker identify as IEN - 4866

DOUBLE-V LEATHER LINK BELTING DOES NOT STRETCH

For serpentine drives and for use with idlers, G&K DOUBLE-V Leather Link Belting has outperformed belts of other materials. The leather segments are beveled on *both* sides to provide a DOUBLE-V which conforms to standard V-belt sheaves. The link construction does not stretch. The DOUBLE-V feature also prolongs the useful life of the belt, for on straight drives it can be turned over and becomes the equivalent of a new belt.

Get more production power with G&K Leather V-Belting! Write today for fact-full bulletin — it's free.

G and K — second century — GRATON AND KNIGHT

GRATON & KNIGHT COMPANY, Worcester 4, Mass.

If you write maker identify as IEN - 4867

ABRASIVES . . Selection and use of shot and grit for blast cleaning, peening

Cleveland Metal Abrasive Co.
885-89 E. 67th St., Cleveland 8, Ohio

Catalog 152 tells how to select abrasives for blast cleaning or peening, properties required in these abrasives, average consumption on four abrasive types. It describes 12 advantages resulting from shot peening. We like the title of the 8-page booklet, "20th Century — the Persuasive Abrasive."

If you write maker identify as IEN - 4868

BALANCING . . Static and dynamic methods described as to theory, equipment and operation

Gisholt Machine Co.
1243-47 E. Washington St., Madison 10, Wis.

Werner I. Senger, manager of the company's Balancing Machine Division, is author of new 16-page booklet which reprints Section 89 from the Tool Engineers Handbook. Title is "Static and Dynamic Balancing." It deals with nature, of balancing, types of static and dynamic machines, unbalance correction of rotating equipment, inspection.

If you write maker identify as IEN - 4869

BELLOWS . . Kit of tracing templates to assist in drawing convolutions of metal bellows

Clifford Mfg. Co.
150-54 Grove St., Waltham 54, Mass.

Five templates, each a letter-size cardboard sheet, are available on letterhead request to assist in reproducing metal bellows in sketches and drawings. The templates present full-scale drawings of 20 bellows from $\frac{1}{8}$ to 2 in. o.d. and a choice of closed, open or box ends. Dimensions are included. An envelope enclosing the templates gives instructions and tabulates data on available standard sizes.

If you write maker identify as IEN - 4870

BUILDING . . Booklet on movable partitions tells how to clean them, hang charts, service wiring

E. F. Hauserman Co.
6802 Grant Ave., Cleveland 5, Ohio

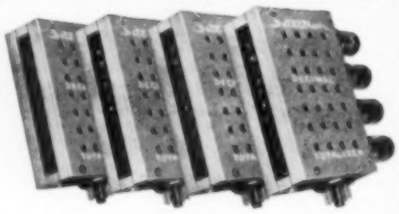
Instructions on its movable interior partitions have been published in 12-page booklet form by the company with the title, "How to Get the Most Out of Your New Hauserman Partitions." These instructions cover maintenance, hangers and mounting methods for charts and pictures, dis-assembly instructions for access to electrical wiring. Ask for Catalog Supplement 2-A when you write.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4871

Detectron

DECIMAL TOTALIZERS



Better heat dissipation assures greater accuracy, stability and dependability of these units. They are provided with standard octal mounting plugs for easy adaptation to most equipment. Direct readings of astronomical proportions are obtainable by cascading several units together. Each unit uses four No. 5963 computer tubes and careful selection of critical parts insures maximum precision. Two models are available—

TU-9: 50,000 counts per second
TU-100: 100,000 counts per second

Ask for Descriptive Literature No. 75

THE *Detectron* CO.
5631 CAHUENGA, NORTH HOLLYWOOD, CALIFORNIA

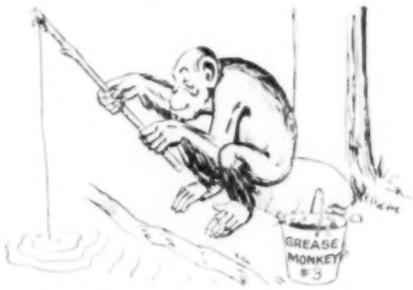
If you write maker identify as IEN - 4872

WRITE FOR THIS **FREE** BULLETIN

Vapofier—the Industrial Oil-Gas Generating Unit used for primary fuel source or as standby for natural gas.

VAPOFIER CORPORATION
10226 South Throop St., Chicago 43, Illinois

If you write maker identify as IEN - 4873



Not on the payroll—since Transall took over

***Pre*-Lubricated Belt Conveyor Idlers**

No Lubrication Labor
No Lubricant Cost

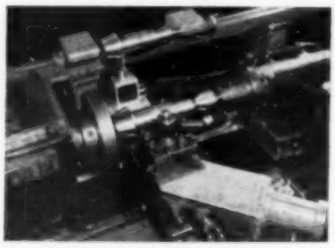
TRANSALL INC.

Manufacturers of a complete line of Belt Conveyor Equipment

117 North 11th St. Birmingham 4, Ala.

If you write maker identify as IEN - 4874

TURCHAN QUALITY CONTROL



Shop converts 1 lathe, then 10 more to hydraulic duplicating . . . . . .

A prominent manufacturer* of earth moving equipment now using Turchan Follower Attachments saves up to 80% in costs! Need for special form tools is eliminated. Set-up time is greatly reduced. Closer accuracies (to .001") avoid rejects. The Turchan unit replaces the conventional cross slide and operates at a 45° angle to the work axis. Hydraulically controlled cutting tools take uninterrupted cuts over work such as motor shafts, spindles, valve stems, back shafts, piston rods, axles — in fact, any shaft regardless of length, number of steps, tapers and radii. There are Turchan Follower attachments for converting lathes, milling machines, planers, shapers, and grinders. Whatever the job — you can "Turn to Turchan to cut costs!"

*Name on request

Write for Information, Catalog, and Estimate

Turchan FOLLOWER MACHINE COMPANY
8259 LIVERNOIS AVENUE DETROIT 4, MICH.

Other MFr. of Hydraulic Duplicating Attachments for Machine Tools

If you write maker identify as IEN - 4875

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.

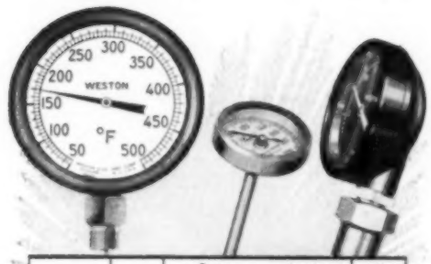
WESTERN Precipitation CORPORATION

ENGINEERS, INSTALLERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 4876

Available
in broadest selection of
types, ranges, stem lengths



Type	Scale Length	Ranges: As low as	Ranges: As high as	Stem Length: As short as	Stem Length: As long as	% Accuracy of Thermo. Range
Heavy Duty Straight Form	9"	−100F	+1000F	2½"	48"	1
Heavy Duty Angle Form	9 or 12"	−100F	+1000F	2½"	72"	1
Standard Angle Form	6"	−100F	+1000F	2½"	72"	1
General Purpose	4½"	−100F	+1000F	2½"	36"	1
Laboratory	3.40"	−100F	+500F	2"	24"	½ of 1

WESTON
all-metal THERMOMETERS

WESTON Thermometers give you *all* the advantages of all-metal construction *to an unmatched degree*. The durability of stainless steel stems . . . the readability of large, boldly marked scales . . . the sustained accuracy due to precision manufacture *proved* through the years. Order through your regular jobber, or your local WESTON Representative. Catalog T-13 on request . . . WESTON Electrical Instrument Corporation, 617 Frelinghuysen Ave., Newark 5, New Jersey . . . *manufacturers of Weston and TAGliabue Instruments.*

WESTON
Temperature Instruments
INDICATE · RECORD · CONTROL

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 4878

CLEANING . . Application suggestions on materials to use in metal-washing equipment

Oakite Products Inc.
116-A Rector St., New York 6, N. Y.

Selection of detergents for metal-washing machines is described in new 16-page pocket booklet, "8 Things to Look for When You Wash Metal by Machine". Application suggestions cover solvent detergents and alkaline materials. Notes are given on machine operation. Please inquire on your letterhead.

If you write maker identify as IEN - 4879

DUST COLLECTING . . New test method for air filter efficiency is detailed in booklet

Farr Co.
P. O. Box 10187-A, Los Angeles 45, Calif.

Performance of an air filter with both fine and coarse dusts is the subject of new 16-page "Technical Report on Improved Testing Methods for Air Filters." It describes investigations made to develop a quantitative filter test method with classified dusts, shows the equipment employed, illustrates performance with graphs and photomicrographs.

If you write maker identify as IEN - 4880

GAGES . . Optical gages and their use are demonstrated by new sound motion picture

Eastman Kodak Co.
341-45 State St., Rochester 4, N. Y.

Principles, methods and equipment are shown in new 16-mm. sound film, "Optical Gaging", available on loan to interested groups. Staging fixtures, design procedure for fixtures, use of optical gages in mass production and inspection are described. Running time is 22 minutes.

If you write maker identify as IEN - 4881

GENERATORS . . Supercharged cooling of large synchronous generators described in bulletin

Allis-Chalmers Mfg. Co.
909 S. 70th St., Milwaukee 14, Wis.

Technical article originally published in the company's Electrical Review now is offered in 4-page bulletin form with the title, "Supercharger Cooling of Generators." It describes forced-circulation hydrogen cooling of the rotor in a large synchronous generator, performance curves, experimental types of conductor cross-section, space saved. Ask for Bulletin 05-R-7773 when you write.

If you write maker identify as IEN - 4882

INSULATING . . New house publication on developments in hermetic seals, bushings, terminals

Heldor Mfg. Co.
223-27 Belleville Ave., Bloomfield, N. J.

"Heldor Newsletter" is new concise publication to keep you informed on the company's products. First issue, for example, is a letter-size data page that features an article on how to paint the terminal area on hermetically-sealed transformers. You can request addition of your name to the mailing list.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4883

SAFELY CLEAN MOTORS
& ELECTRICAL EQUIPMENT WITH FORMULA 602

SAFE ON WORKERS

Formula 602 reduces employee time-loss due to solvent toxicity. Formula 602 is really safe and efficient—use it to clean motors, generators, radio parts, coils, condensers, switches, transformers, etc.

SOLVENT REPLACEMENT FOR CARBON TETRACHLORIDE

Eliminate the use of dangerous solvents! Formula 602 is designed to safely replace toxic solvents. It cleans instantly, dries rapidly without a residue and will not corrode metals. Formula 602 completely minimizes fire hazards and the dangers of dermatitis. Use it in wipe, dip or spray application—it's safe and effective for all your electrical equipment.

SEND FOR FULL INFORMATION!

the PENETONE co.
Box IEN-662
Tenafly, N. J.

If you write maker identify as IEN - 4884

"BUILT-IN" FEATURE

SAVE OVER 50% FLOOR SPACE THE HAMMOND WAY

Hammond of KALAMAZOO

NO-DUST GRINDER

- Requires only 6½ square feet.
- Protects employees' health.
- Protects nearby machine tools against excessive wear from dust and grit.

A self-contained Grinder and Dust Collector for 10", 12" and 14" wheels. Write for Bulletin No. 104.

Hammond Machinery Builders
1607 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

If you write maker identify as IEN - 4885

KIPP Air Grinders

• FASTER SPEEDS
• BETTER RESULTS
• LOW PRICES

MODEL JA
50,000 R.P.M.
Weight 12 ounces; length 6⅝ inches; check size ⅛ inch. Wheel guard removed for better illustration.

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U. S. A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 4886

CONTROL dust
with DUCON WASHERS

Superior design and exclusive features, including wet suppression, result in the most economical and efficient control of dust and fumes.

Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.

In addition to use for washing of air and gases, DUCON Centrifugal-Wash Collectors are ideal for many other applications, such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.

Construction: steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for Bulletin CW 48-1

The DUCON Co.
MINEOLA, N. Y.

If you write maker identify as IEN - 4887

Yates-American

Chooses

CARTER JIFFY TIRES

. . . because they end all bandsaw tire problems

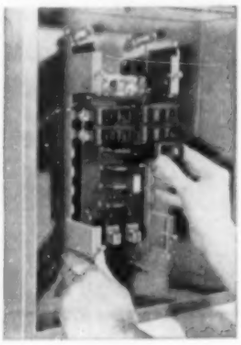
Solves all bandsaw tire problems! That's why you'll find Carter Jiffy Tires on the new "J" Line 20" bandsaw manufactured by Yates-American Machine Co., Beloit, Wis. What's more, these revolutionary tires outwear other tires 2 to 4 times. And when replacement is needed, anyone can replace them in 10 minutes—and have a perfect wheel. Write for free, illustrated folder.

Carter

CARTER PRODUCTS CO., INC.
420 Wm. Alden Smith Bldg.
50 Ionia Avenue, S. W.
Grand Rapids 2, Michigan

CUTS COSTS WAY DOWN!

If you write maker identify as IEN - 4888



NEW CLASS I PANELBOARD IS FIRST WITH PLUG-IN BREAKER

Trumbull's new line of NLTQ Panelboards introduces the first plug-in circuit breaker with quick-make, quick-break. Also: thermal-magnetic protected, physically interchangeable breakers.

OTHER NEW FEATURES

Interior—spring-mounted, self-aligning.
Molded-in-plastisol busbar and stab assembly.
Sequence phasing—in all sizes.

Write for Bulletin TEB-14

TRUMBULL (T) ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
Plainville, Conn.

If you write maker identify as IEN - 4889

Automatically SOUNDS SIGNALS, OPERATES EQUIPMENT ON ACCURATE SCHEDULES

Montgomery PROGRAM CLOCKS & INDUSTRIAL TIMERS

Program clocks for automatic control of signal systems, governing work periods, permitting manual operation for special programs or emergency alarms without affecting accuracy of pre-set schedule.

Industrial timers start and stop equipment automatically to a pre-set schedule. Wide application for shop and laboratory operations. Special timing equipment engineered to your requirements.

Request free specification and data sheets

MONTGOMERY MANUFACTURING CO., Owensville 8, Ind.
Please send free Industrial Timer data sheets.
Name
Position Company
Address City State

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 4890

LIGHTING . . Suggested cleaning program to keep fluorescent lighting at optimum efficiency

Sylvania Electric Products Inc.
1740 Broadway, 16th Floor, New York 19, N. Y.

Eight steps toward a planned fluorescent lighting maintenance program are set forth in new 12-page booklet, "Why, When and How." They include regular check of lighting levels, replacement of burnouts, a step-by-step detailed cleaning procedure, maintenance of light-color walls and ceilings, proper line voltage, stocking of fixture parts, use of labor-saving methods and equipment.

If you write maker identify as IEN - 4891

LUBRICATING . . Information on use of company's lubricants given in house publication

Fiske Brothers Refining Co.
127-31 Lockwood St., Newark 5, N. J.

March issue of "Lubriplate Sales Topics" carries an article on "What Lubriplate lubricants mean to maintenance engineers", written by R. L. Watts, manager of the company's Lubriplate division. Other information includes user reports and an article on central-type lubrication equipment. Your name will be added to the mailing list upon request.

If you write maker identify as IEN - 4892

METAL SPRAYING . . Application suggestions and equipment developments in house publication

Metallizing Co. of America
3518-22 W. Carroll Ave., Chicago 24, Ill.

"The Metallizer," company's house publication, has been reissued recently to tell you how to stretch productive life of equipment, prevent corrosion and waste, all by metal spraying. Information in the form of technical articles tells how this is done, includes equipment developments, application suggestions. Your name will be added to the mailing list upon request to receive the publication as issued.

If you write maker identify as IEN - 4893

METAL TREATING . . Detail instructions on producing a black coating for magnesium parts

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

Bulletin DM-8-d is revised 8-sheet edition of the company's instruction booklet on its chemical treatment No. 8 for magnesium. It details the procedure for this alkaline dichromate method of producing a durable black coating, starting with cleaning, acid pickling, sulphate-dichromate-hydroxide treating, control, safety recommendations.

If you write maker identify as IEN - 4894

PIPE . . Service report on plastic pipe in oil field installations

Tennessee Eastman Corp.
10 E. 40th St., Room 4010, New York 16, N. Y.

Corrosion resistance is the first topic described in new 24-page booklet, "Tenite Plastic Pipe in the Oil Industry". Use of the pipe is summarized for oil, salt water, chemicals. Pictures show handling, placing, performance examples.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4895

Save MAN HOURS AND CRITICAL MATERIALS
Improve QUALITY . . . with
HYPREZ "OS" DIAMOND COMPOUNDS

Tungsten-carbide Valve and Steel Seal-Hyprez "OS" mirror-finished to perfect flatness.

Hyprez "OS" Compounds produce finer, faster finishes—in either manual or production lapping.

"OS" is self-lubricating, absorbs more abraded material—has long-lasting cutting action.

"OS" diamond particles are precision graded, uniformly distributed, permanently suspended.

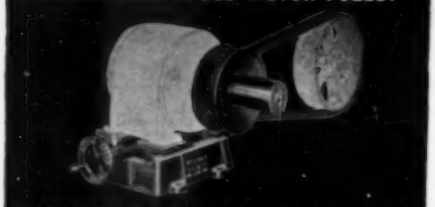
"OS", like "Type W", is available in color-identified 18 or 5 gram cartridges for use with Hyprez Applicator Gun; also in jars or collapsible tubes.

Write for Complete Information or Free Demonstration to Dept E-552

HYPREZ DIVISION
ENGIS EQUIPMENT CO.
431 S. DEARBORN ST. CHICAGO 5, ILL.

If you write maker identify as IEN - 4896

REEVES VARI-SPEED MOTOR PULLEY



CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower

1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

2 Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for FREE *Catalog IN11c G.*

REEVES PULLEY COMPANY · COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

If you write maker identify as IEN - 4897

Dekoron plastic armored metal tubing . . . *an exciting new material for product designers*

Dekoron tubing is produced by a patented extrusion process which shrinks a thick coating of colorful and durable plastic over any tubular or solid metal core. This gives it an attractive, moisture-resistant finish with the structural strength of the metal tubing.

Available in a large variety of colors, shapes and sizes. Dekoron is currently in use in:

electrical conduit
instrument air lines
children's furniture
wheeled goods
office and industrial furniture
outdoor furniture
garment racks
crowd control rails
appliance handles
architectural trim
fluid lines

For color, structural strength, and corrosion resistance, investigate Dekoron today. Literature available on request to Samuel Moore & Company, Dekoron Tubing Division, Mantua, Ohio.

Dekoron® tubing

PLASTIC ARMORED METAL

If you write maker identify as IEN - 4898

DeZURIK EASY-OPERATING PLUG VALVES

IN A THOUSAND MILL USES

There's hardly a valving job in any plant or mill operation where DeZurik Valves haven't *proved superior* in actual, successful service. They're known throughout the country for leak-free, trouble-free performance on all types of flow, from air to clay, from fibrous matter to resinous compounds. The exclusive DeZurik RUBBER-FACED PLUG is self-compensating—it keeps closing drip-tight *every time on any line!*

DeZURIK SHOWER CO.
SARTELL, MINN.

If you write maker identify as IEN - 4899

LIGHTWEIGHT COMFORT AT ANY TIME . . .
Particularly Desirable in Warm Weather!

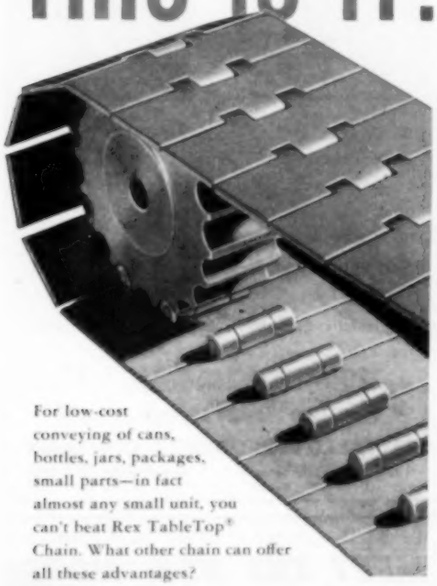
In hot or humid working atmosphere this Respirator is especially welcome because of its light weight (1½ oz.). Simply constructed, economical, it consists of a smooth, rubber mask and a permanent type filter. Recommended for protection against pneumoconiosis-producing and nuisance dusts such as silica, borax, carbon, glass, grain, graphite, cement, limestone, gypsum, coke, charcoal, wood, pollen, flour and aluminum. APPROVED BY THE U. S. BUREAU OF MINES—BM2137. Ask your AO Safety Products Representative.

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches In Principal Cities

If you write maker identify as IEN - 4900

THIS IS IT!



For low-cost conveying of cans, bottles, jars, packages, small parts—in fact almost any small unit, you can't beat Rex TableTop® Chain. What other chain can offer all these advantages?

1. Simple as a door hinge—only two parts—link and pin.
2. Smooth transfer—short opening between links—will not catch and trip containers—slides freely under blocked containers.
3. Easy to clean—no pockets to catch foreign matter and encourage bacteria.
4. Easy to couple and detach—fits into existing tracks.
5. Unique sprocket and hinge joint mean wider bearing area . . . longer chain life.

Compare TableTop with other types of conveying methods. We feel sure you'll agree that TableTop is the low-cost, long-life, efficient way to handle it. Our bulletin 51-60 contains all the details on this great chain. Send for it today. Chain Belt Company, 4675 West Greenfield Ave., Milwaukee 1, Wisconsin.

REX CHAIN BELT COMPANY

Chain Belt COMPANY OF MILWAUKEE

Atlanta • Baltimore • Birmingham • Boston • Buffalo • Chicago Cincinnati • Cleveland • Dallas • Denver • Detroit • El Paso • Houston Indianapolis • Jacksonville • Kansas City • Los Angeles • Louisville Midland, Texas • Milwaukee • Minneapolis • New York • Philadelphia Pittsburgh • Portland, Oregon • Springfield, Mass. • St. Louis Salt Lake City • San Francisco • Seattle • Tulsa • Worcester

If you write maker identify as IEN - 4902

TESTING . . Noise generator, range 30 cycles to 5 megacycles

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.

List price is $260

Type 1390-A is a new electronic generator to produce random electrical noise for test purposes. Representative are measurements of room acoustics, loudspeaker and microphone performance, filter operation, recording system calibration, observation of resonances and electrical averaging of resonant responses. Operation is on 110-volt 50 or 60-cycle ac. Dimensions are 12 by 9¼ by 7½ inches. Weight with metal cabinet is 15 pounds.

The noise source is a gas-discharge tube operated in a magnetic field combined with two stages of amplification and suitable filters for open-circuit output of 1 volt on three frequency ranges. Lowest is 30 cycles to 20 kilocycles. The next is 30 cycles to 500 kilocycles. The largest is 30 cycles to 5 megacycles in overall frequency.

If you write maker identify as IEN - 4903

GLASS . . Patterned sheet diffuses light to minimize glare

Source: LIBBEY-OWENS-FORD GLASS CO.
1047 Nicholas Bldg., Toledo 3, Ohio

Pattern produces filtering action

Aklo Fine-tex is a new patterned sheet glass in ⅛ and ¼-in. thicknesses for use in industrial and commercial buildings. It is also available in the ¼-in. thickness in wired form for skylights and fire-retardant glazing. When maximum eye comfort is required, the sheet is available with a frosted as well as the patterned finish.

If you write maker identify as IEN - 4904

STORING . . Rotating shelves ride on central shaft under work top

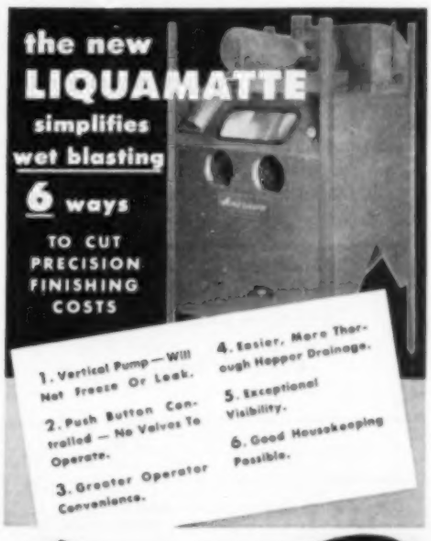
Source: WASSELL ORGANIZATION
12-16 Riverside Ave., Westport, Conn.

Rotor-File trade names a new assembly of rotating shelves, vertical shaft and desk-type top, with a lighting fixture, to store records and materials in trays and racks. Each shelf, except the lowest one, is cut out at one point to provide access to the shelf below. Storage capacity for 8 by 5-in. cards is 512 in. in five tiers. Long and short trays alternate on the shelves to make best use of the available area.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 4905

the new LIQUAMATTE simplifies wet blasting 6 ways TO CUT PRECISION FINISHING COSTS



1. Vertical Pump—Will Not Freeze Or Leak.
2. Push Button Controlled — No Valves To Operate.
3. Greater Operator Convenience.
4. Easier, More Thorough Hopper Drainage.
5. Exceptional Visibility.
6. Good Housekeeping Possible.

American LIQUAMATTE WET BLASTING
WHEELABRATOR & EQUIPMENT CORP.
507 S. Byrkit St., Mishawaka, Ind.

If you write maker identify as IEN - 4906

BE FRESH . . . STAY FRESH

wear a DUPOR Automatic Water-cooled Respirator

For years a prime favorite of respirator users. Sponge filter saturated in water provides moist air—cool, comfortable breathing. Keeps out dust, fumes, smoke, paint spray. Face mask is of soft white rubber. Maximum visibility. Automatic valve exhausts breathed air instantly. Wear while paint spraying, or as protection against gases, dusts, smoke, fumes.

Sample sent $9.00 ea. ppd.

H. S. COVER
South Bend, Ind.

If you write maker identify as IEN - 4907

Measure Torque with these dependable low-cost instruments

With exclusive "Torkflash," a flash of light tells you when you have the correct tension. "5-in-1" scale lets you select unit of measure most convenient (foot lbs., inch lbs., SAE or USS bolts and nuts, etc.). Or you can set up your own scales. Blackhawk also builds dial-type indicators up to 1000 ft. lbs. capacity. Sold by leading supply houses. Blackhawk Mfg. Co., Dept. T-1552, Milwaukee 1, Wis.

Your most practical line of TORQUE INDICATORS

GET THIS FREE BOOK NO. W-50

BLACKHAWK

If you write maker identify as IEN - 4908

IDEAL "Hand Type" CLEANERS

Cut Cleaning Time and Costs!

3 MODELS ...for EVERY CLEANING JOB

BLOW! VACUUM! SPRAY!

For easier, faster maintenance or production cleaning jobs—on machinery, stock bins, scrap pick up—there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly—to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value—get IDEAL!

Sold Through Leading Distributors

TRY ONE FREE!

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner for our plant.
NAME
COMPANY
ADDRESS
CITY ZONE STATE

If you write maker identify as IEN-4909

This DELTA 14-inch Drill Press IS SCORES OF MAINTENANCE TOOLS IN ONE

Here's a machine that pays for itself very quickly by doing a wide variety of woodworking operations, in addition to drilling. You can do sanding, routing, shaping, mortising, tapping and many others. Ideal for metalworking, too—capacity is ⅝" in steel, ½" in cast iron.

With the exclusive Delta interchangeable spindle, the cutting tool can be changed in seconds.

The Delta 14" drill press is easily portable—bring the tool to the job or the job to the tool.

Send for the Delta A8-51 Catalog with full specifications covering all Delta drill presses.

There's a Delta Power Tool for Your Job - Wood or Metal Working
51 MACHINES -- 246 MODELS -- MORE THAN 1300 ACCESSORIES

DELTA DELTA POWER TOOL DIVISION
MILWAUKEE Rockwell MANUFACTURING COMPANY
6135 E. VIENNA AVE., MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN-4910

ONE MAN DOES THE WORK OF TEN with HYPRESSURE Jenny STEAM CLEANER

You can keep your plant and equipment spic and span for one tenth the cost of cleaning by hand! In a single hour, one man, using Hypressure Jenny, can do more cleaning and sanitizing than ten men can accomplish by hand methods. Not only does Jenny do a faster and better job of plant housekeeping, but by stripping grease and dirt from machinery before repairs, machine "down-time" is cut by as much as 40%. It will pay you to get full facts about how you can reduce your cleaning costs by 90%. Write today. There is no obligation.

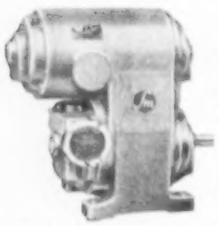
Distributors in all parts of the world. For local representative see Classified Telephone Directory.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
Serving since 1866
P. O. BOX 85 • CORAOPOLIS, PA.

If you write maker identify as IEN-4911

MAXIMUM MACHINE OUTPUT ACHIEVED WITH SPEED-TROL

Through use of Speed-Trols we can utilize the full productive capacity of our Meridian cutting and forming presses. Because of Speed-Trol's remote speed adjustment and accurate speed regulation our presses can accommodate the wide variety of types and thicknesses of materials which we use and for which the presses were designed, reports J. Vollmer, of Arvey Corp., Detroit, manufacturers of automotive products.



STERLING SPEED-TROL GIVES YOU VARIABLE SPEED CONTROL NECESSARY FOR:

Equipment adaptation to: Sequence synchronization—operators' abilities—load variations due to differences in quality, quality weight, size, tensile, hardness or shape of material to be processed—machined, conveyed, blended, mixed, etc.

Process control of: Temperature—viscosity—level—pressure—flow—etc.

Time control of: Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.

With Speed-Trol you get the maximum in production, plant efficiency, quality and profit.

70 ILLUSTRATIONS showing how Sterling Electric Power Drives reduce production costs. Write for Bulletin No. A-127.

STERLING ELECTRIC MOTORS

Plants: New York City 51, Van Wert, Ohio, Los Angeles 22, Hamilton, Canada, Santiago, Chile • Offices and distributors in all principal cities

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN-4912

PLANT SITES . . Information on Los Angeles from the standpoint of plant dispersal against attack

Department of Water and Power
Box 3669-A, Terminal Annex, Los Angeles 54, Calif.

Eight points on the City of Los Angeles as an industrial area meeting the requirements of the National Security Resources Board are set forth in new 4-page "Industrial Dispersal for Defense." These points include area of Los Angeles, industrial dispersion, industrial and population density.

If you write maker identify as IEN-4913

PLASTICS . . Fluorocarbon applications are detailed in reprint of technical article

United States Gasket Co.
658 N. 10th St., Camden 1, N. J.

Merritt A. Rudner, Chief Electronic Engineer of the company's Fluorocarbon Products Division, is author of a recent article in the technical literature. It will be sent you on request as 8-page bulletin, "Metal-Surfaced and Other Fluorocarbon Combinations". The information applies particularly to Teflon, describes its properties in detail.

If you write maker identify as IEN-4914

PUNCHING . . Pressure required for hole punching is determined by slide calculator

Ward Machinery Co.
562-66 W. Washington Blvd., Chicago 6, Ill.

Shearing strength in tons is set against hole diameter or length of cut at the upper of two windows in new 8¾ by 3½-in. cardboard calculator. Tons of pressure required to do this punching can be read at a second window against metal thickness. The first scale covers materials from aluminum to stainless steel and hole diameter from 3/16 to 10 inches. The second covers material thickness from .005 to .250 inch.

If you write maker identify as IEN-4915

RECORD KEEPING . . Booklet suggests procedure on what records to keep and what records to destroy

Remington Rand Inc.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Record retention is defined by new 24-page Booklet X-1200 as the intelligent planning for disposition of records at the time they are created — by destruction of useless records and economical safe storage of those that must be retained. The booklet tells how to organize a retention plan, how to operate it, lists records that should be kept.

If you write maker identify as IEN-4916

RUBBER PRODUCTS . . Suggestions on design of hard rubber and plastic parts in 80-page handbook

American Hard Rubber Co.
91-95 Worth St., New York 13, N. Y.

New second edition is announced for the company's "Ace Hard Rubber and Plastics Handbook," available on request to design engineers. It describes properties of hard rubber, design techniques, standard forms and sizes, machining methods, special materials, rubber linings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4917

Bin Stuck Lately? Use this space to make a rough sketch or send details of the troublesome bin or hopper

Name _____ Title _____
Address _____
City _____ State _____

Move, Settle or Package Quickly with Cleveland Air Vibrators

THE CLEVELAND VIBRATOR CO.
2737 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN-4918

Full facts on self-balancing electronic recording!

Interested in speedier, more accurate recording?

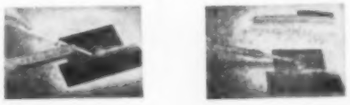
Get the story on Bristol DYNAMASTER . . . the electronic way to measure, record and control resistance, capacitance, inductance, current, or voltage—or any variable that can be converted into those quantities. Available as a-c bridge or d-c potentiometer.

Write for free DYNAMASTER bulletin. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL
AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN-4919

Re-Galvanize with GALVALLOY COATING



Won't burn off . . . peel . . . chip off . . . Withstands 30 day salt-spray test. Bonds quickly, completely, and permanently to any sheet or structural steel . . . cast iron . . . aluminum . . . magnesium and pot metal.

NO FLUX, sandblasting or cleaning required. Just heat the surface and apply.

Incidentally, Galvalloy will save time and money for *YOU.*

If your dealer cannot supply Galvalloy please write the factory:

METALLOY PRODUCTS COMPANY
1351 East 17th Street Los Angeles 21, Calif.

If you write maker identify as IEN-4920

MEET THE NEW MODEL

MUCKLE VENTS

Take a look at the new silhouette . . . it's low slung and streamlined—better looking on any roof!

Get away from old, "eye sore" ventilators—get the newly designed Muckle Vents. Engineered for better performance in moisture laden air—the motor is out of line of air flow. A compact, good looking, easy to install all-in-one unit to fit any roof.

Write today for more information on Muckle Vents.

Muckle MANUFACTURING CO.
DWATONNA 33, MINN.

If you write maker identify as IEN-4921

SAFETYMIX

EXTRA SHOWER SAFETY ... at no extra cost

PROTECTS AGAINST SUDDEN SCALDS

... Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT

... Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE

... The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE

... Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

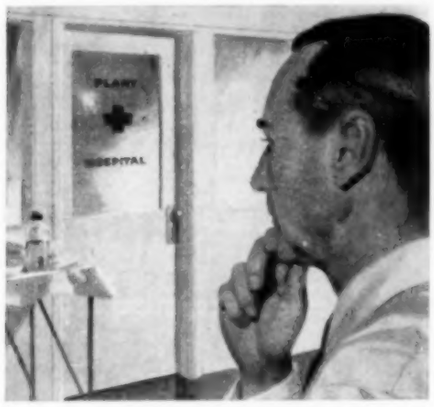
100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN-4922



The one precaution Tom overlooked...

Tom McBride was the best safety engineer our company ever had. He had an uncanny sense of detecting danger, and seemed to do the things necessary to prevent accidents before they occurred. We won three safety citations under Tom's direction. Our plant was clean as a pin.

But then the roof fell in. A worker in the machine shop slipped in a pool of spilled oil, fell and broke his arm—a nasty break at the elbow. A day later a boy in the press room had a similar accident, except he sprained his back. It looks like it may be serious. But the pay-off was the fire in the tool crib. Someone dropped a lighted cigarette in some oil drippings, and I'm ashamed to tell you what happened. Among other results, it damaged some dies that will take months to replace, and almost lost an important customer because we couldn't deliver on time.

Careful as Tom is, he didn't realize that there are better ways to transfer oil than by drawing it through a spigot. I told him about Tokheim Hand Pumps, and believe me he bought 30 of them quick. You may save yourself plenty of grief if you buy some for your plant too.

QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

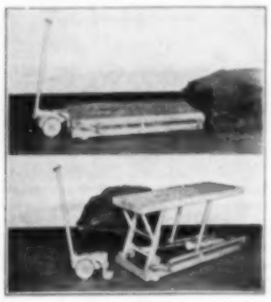
Order from your dealer, your oil company, or your Tokheim representative. Write factory for literature.

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Avenue, Fort Wayne 1, Indiana
Factory Branch: 1309 Howard Street, San Francisco 3, California

If you write maker identify as IEN-4924

ELEVATOR . . Hydraulic table positions work at convenient height

Source: LANCE LIFT CO.
104 W. Fowler St., Milwaukee 3, Wis.



Special sizes also

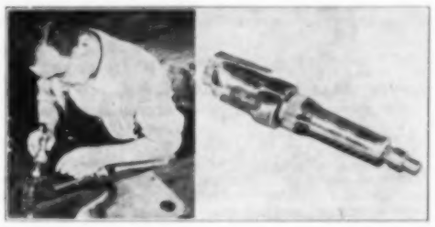
Lift height is to 30 in. above the floor from a lowered position at 7½ in. for this new standard Model-2000 hydraulic table. The figures apply when the table is positioned flat on the floor. Load capacity is to 1 ton. Table dimensions are 24 by 60 in. and weight is 375 pounds. The table is available also with wheel mounting so it can be employed as a truck to handle work and tools between storage and machines. A two-wheel lift jack shown in the illustration can be used to move it from one place to another.

Lift action is by a foot-operated pump to transfer oil from a storage cylinder to a horizontal power cylinder. The power piston carries a cross-head terminating in rollers at the two sides with wheels that ride an inclined track. The rollers bear against cam-shaped arms to apply lifting pressure to the table. The action is designed so the table top moves vertically. A motor-driven pump can be specified.

If you write maker identify as IEN-4925

GRINDING . . Pneumatic tools for die and mold roughing and finishing

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.



Exhaust air keeps the wheel cool

Shorty, to the left in the illustration, has been added to the company's line of portable equipment for finishing operations on dies and molds. It can be applied with mounted abrasive wheels and points, rotary files, carbide burrs, wire brushes, abrasive rolls, small discs. It is equipped with an Erickson collet chuck. It weighs 18 oz. and is 5¼ in. in overall length.

The second of the two new units, to the right in the illustration, is known as No. PGK2122L. It is designed for heavy-duty operation although it weighs only 1¾ pounds. It is driven by a vane-type rotary motor and is controlled by a speed regulator and lever throttle. Eight sizes of Erickson collets are available for the new tool.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4926

3 REASONS WHY... MAINTENANCE MEN Specify

- PREVENTS JOINTS LEAKING
- PREVENTS STUDS SEIZING
- PREVENTS GASKETS STICKING

PLS is a "Plastic Lead Seal" which prevents leakage under most severe conditions of pressure, temperature vibration, expansion and contraction. Also keeps underground connections leakproof for duration of installation. PLS lubricates threads. It never hardens. It prevents galling and seizure. Insoluble in all petroleum products, steam and water. Underwriters' Approved.

TRY A SAMPLE AT OUR EXPENSE!

JOHN CRANE
CRANE PACKING COMPANY
1815 CUTLER AVE • CHICAGO 14, ILLINOIS

If you write maker identify as IEN-4927

On-the-job servicing of Hansen Tackers is speeded up by the Take-up Jaw. Quick as a flash it opens or closes and provides for cleaning and reassembly—in seconds!

Wherever tacking or fastening operations are required use Hansen with its time-and-money-saving features.

REQUEST BOOKLET

A. L. HANSEN MFG. CO.
5051 Ravenswood Ave.
Chicago 40, Ill.

Open and Shut HANSEN FEATURE *that means split second* ON-THE-JOB INSPECTION

Hansen ONE-HAND TACKERS

If you write maker identify as IEN-4928

Dick 960 A B Dick 960 A B Dick 960
GRAPH MIMEOTYPE MIMEOGRAPH MIMEOTYPE

NEW A. B. DICK MIMEOGRAPHS

black-on-white COPIES or colored copies of anything typed, written or drawn

produced FAST on most all paper and card stocks at speeds ranging up to 180 copies per minute

and EASY on today's A. B. Dick mimeographs with many new features and improvements for more efficient operation.

WRITE TODAY for full details

A B DICK COMPANY
5700 Touhy Ave. • Chicago 31, Illinois
For use with all makes of suitable stencil duplicating products

If you write maker identify as IEN-4929

New MHS Liftveyor ready to go to work for you anywhere

Liftveyor is a complete unit ready for service.

You don't have to be a mechanic to set it up or to move it.

Incorporates the latest design ideas all proven in actual service.

Sturdy and dependable without being cumbersome.

Engineered by conveyor specialists with more than 30 years of materials handling experience.

ASK FOR INFORMATION ALSO ON

Roller conveyors — Horizontal belt conveyors
Live roller conveyors — Overhead conveyors
Complete handling systems

Mechanical Handling Systems, Inc.
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities
In Canada: Canadian Mechanical Handling Systems, Ltd.

If you write maker identify as IEN-4930

GRIGOLEIT OFFERS Beauty and Economy IN MOLDED PLASTICS

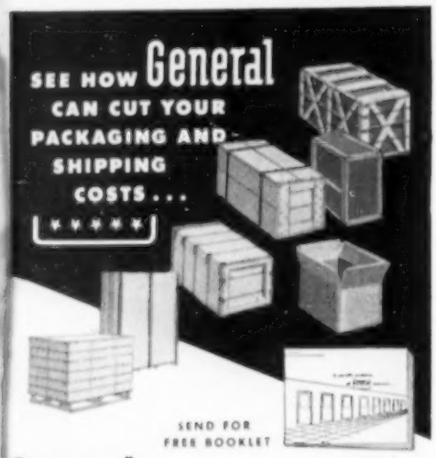
For economy, service, and sales appeal, now is the time to dress up your product with attractive new plastics by GRIGOLEIT. A complete line of stock handles, knobs, pendants and threaded specialties are available for your selection. Order now while we can still assure immediate delivery.

Whatever your problem might be, let GRIGOLEIT handle it!

THE GRIGOLEIT COMPANY
"Over Twenty Years in Plastics"
702 E. NORTH ST. DECATUR, ILLINOIS

If you write maker identify as IEN-4931

SEE HOW General CAN CUT YOUR PACKAGING AND SHIPPING COSTS...



SEND FOR FREE BOOKLET

General BOX COMPANY

GENERAL OFFICES:
1815 MINER STREET, DES PLAINES, ILL.

DISTRICT OFFICES AND PLANTS: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, General Box Company of Mississippi, Meridian Miss., Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

If you write maker identify as IEN-4932

LETS ONE LINE MOVE, STOPS THE OTHER

● Used where two sections of power, belt, live roller or chain conveyor converge, the Ultimate Traffic Cop permits one case, can, carton or box to pass on one line while the other line is stopped by the arm. When flow of material ceases, or sufficient gap occurs on line, material on other line passes.

MAIL THIS COUPON

FREE!

ISLAND EQUIPMENT CORP. Dept. 165
27-01 Bridge Plaza North
Long Island City 1, N. Y.
Please send Bulletin TC-1 describing the ULTIMATE TRAFFIC COP.
COMPANY
BY
ADDRESS
CITY ZONE STATE

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN-4933

PUMPS . . Two instruction booklets on centrifugal pumps have trouble shooting charts

Allis-Chalmers Mfg. Co.
909 S. 70th St., Milwaukee 14, Wis.

Installation, operation and repair of the company's centrifugal pumps are covered by two new instruction booklets which are available on request. Booklet 08-X-7813, 24 pages, deals with single-stage single-suction pumps Types CW, PW, SW, TV, SSOH, and PO. Booklet 08-X-7780, 48 pages, is on multi-stage pumps.

Both booklets recommend a regular inspection procedure. They include a maintenance timetable and a performance record sheet. Both have charts on how to locate trouble.

If you write maker identify as IEN-4934

SILICONES . . What they are and what they are used for described in booklet

Dow Corning Corp.
P. O. Box 592-A, Midland, Mich.

"What's a Silicone?" titles new informal 36-page Booklet SIL-1. It answers this question by showing applications of silicones in polishes, water repellents, fluids, release agents, lubricants, defoamers, protective coatings, electrical insulation and as Silastic silicone rubber.

If you write maker identify as IEN-4935

STEELS . . Atmospheric corrosion data on steels containing amounts of nickel and copper

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Weathering tests on low-alloy high-strength steels are summarized in 8-page reprint bulletin EZ-63-21. Some of the tests extend over a period of 22 years. Results are compared for sulphurous, industrial, marine and rural areas. Beneficial effects of nickel, copper and other elements are described.

If you write maker identify as IEN-4936

VALVES . . Book of comparative specifications on valves by 19 manufacturers to assist in selection

Equivalent Valves Co.
P. O. Box 816-A, Station H, Los Angeles 44, Calif.

Revised edition of "Equivalent Valves" is a 170-page loose-leaf manual containing some 50,000 listings. It carries a list price of $25. It compares line valves of 19 manufacturers by material, type, pressure rating, structural variations. Materials include brass, cast iron, cast steel, forged steel.

If you write maker identify as IEN-4937

WELDING . . Application suggestion booklet on welding alloys for coal mine equipment maintenance

Eutectic Welding Alloys Corp.
40-42 172nd St., Flushing 58, N. Y.

Repair of broken parts, overlayment for wear resistance, fabrication of special machinery are described in new 16-page "Coal Mine Maintenance Welding." Application examples are illustrated by photographs. A chart lists suggested alloys, electrodes and rods by some 50 application points.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN-4938

UNITABLE®
BELT CONVEYOR

For Assembly - Inspection - Packaging

The most ADAPTABLE portable conveyor you can find. Exclusive "unitized" design 10' to 80' lengths. Write for UNITABLE Bulletin now.

CONVEYOR SPECIALTY COMPANY INC.
35 Newport Avenue
North Quincy 71, Mass.

If you write maker identify as IEN-4939

MICO ENGRAVERS

An accurate inexpensive and portable machine for engraving name plates and panels, forming small molds and dies, and profiling small parts. Geometrically correct for true three dimensional work. Accurately duplicates master copy in metals, plastics or wood. Rugged, sturdy construction.

COMPARE THESE SUPERIOR FEATURES
- Engraves in 2 or in 3 dimensions.
- Pantograph permits 4 reduction ratios.
- Micrometer depth control graduated in thousandths of an inch.
- High speed, ball bearing spindle.
- Chuck ½" to take variety of small tools, burrs, mounted points, as well as standard cutters.

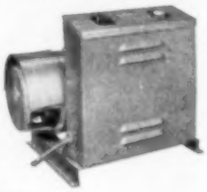
Send for Illustrated Catalog

MICO INSTRUMENT COMPANY
81 Trowbridge Street Cambridge, Mass.

If you write maker identify as IEN-4940

Consult Hertner for battery charging equipment for driver ride trucks or motorized hand trucks

"KX" Charg-O-Matic Line



Single or multiple circuit models are available for charging driver-ride electric trucks. The single standardized circuit line is available in 13 models for charging lead acid batteries and 7 models for charging Edison batteries. For central station charging the unitized switchboard is provided in sections with a motor generator set for charging two or more batteries simultaneously.

"HX" Charg-O-Matic Line

Single or four circuit models are available for charging motorized hand truck batteries—a series for lead-acid batteries and a series for Edison batteries.

Double Duty Charge Control

An accessory for automatically charging two batteries from either an "HX" or "KX" single circuit battery charger.

Special-built Battery Chargers

Where battery charging equipment is needed to do a special job, Hertner engineers and modern plant facilities are available to produce a charger to fit any requirement.

Standard Models for Immediate shipment. For complete information consult your electric truck or Hertner representative, or write direct.

THE HERTNER ELECTRIC COMPANY
12690 Elmwood Avenue • Cleveland 11, Ohio
A General Precision Equipment Corporation Subsidiary

Motors • Motor-Generators • Generator Sets • Representatives in Principal Cities

If you write maker identify as IEN-4941

ROTARY UNIONS

A Revolving Steam Connection

This Catalog will save you Money

ROTARY UNIONS give many months of perfect service without any tightening or adjusting maintenance. You will find them to be the best connections you ever had for heating or cooling revolving shafts or drums . . . for such applications as Steam up to 150 PSI, Hot Oil to 500°, Coolants, Air, Gases, Water, Brine, Vacuum, and Alternate Mixtures up to 1000 RPM.

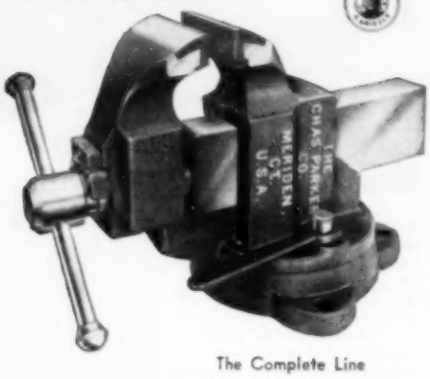
We have many standard models and sizes on which deliveries can be made from stock. Special models for higher speeds, pressures, and Dowtherm. Engineering service is available at all offices. Write Department 5E for our new catalog.

"Where Good Connections Count"

PERFECTING SERVICE COMPANY
332 Atlanta Avenue (Home Office and Factory) Charlotte, N.C.
Offices in Chicago - Cleveland - Philadelphia - Providence - New York - Montreal - Toronto

If you write maker identify as IEN - 4942

PARKER VISES



The Complete Line

Write for catalog

Machinists • Top Swivel Jaw
Combination Pipe • Hinge Pipe
Woodworkers • Utility

STOCKED BY DISTRIBUTORS EVERYWHERE

THE CHARLES PARKER CO., MERIDEN, CONN.

If you write maker identify as IEN - 4943

STOP downtime and expensive repairs on HYDRAULIC EQUIPMENT

with World-Famous

HONAN-CRANE oil purification

550 gallon hydraulic system of world's largest injection molding press (300 ton) gets Honan-Crane oil purification regularly at Amos Molded Plastics, Edinburg, Indiana. Hydraulic equipment at Amos Plastics has been protected by Honan-Crane Purifiers since 1942.

70% of Trouble on Hydraulic Equipment is Caused by Oil Contamination and Failure

Honan-Crane Purifiers prevent trouble before it starts in hydraulic installations by keeping oil clean and free from damaging contamination. When used to replace ineffective methods or where no purification program has been practiced previously, 50% reduction in hydraulic maintenance costs and 4 to 5 times the former safe oil life are common experiences.

Honan-Crane Purifiers prevent excessive wear of hydraulic pump parts . . . prevent clogging and sticking of control valves, pistons and other hydraulic mechanisms . . . greatly extend the safe-use life of hydraulic oils. Specify Honan-Crane Oil Purification for your hydraulic equipment. Proven by years of dependable service throughout the world . . . there's no reason to settle for less!

FREE! 8-page "Hydraulic Bulletin" with case histories describing profitable advantages of Honan-Crane Purification in many critical hydraulic applications. Write for your copy!

Honan-Crane Corporation

802 Wabash Avenue, Lebanon, Indiana
A Subsidiary of
Houdaille-Hershey Corp.
IN CANADA: E. W. Playford, Ltd., Montreal 28
W. E. Micklethwaite, Toronto 18
Cummings Galbraith, Ltd. Edmonton, Alta.

WORLD LEADING OIL FILTER MANUFACTURER

© 1952 HONAN-CRANE CORP.

If you write maker identify as IEN - 4945

CONVEYING . . Hydraulic driven belt adapted to mount on industrial tractor

Source: AMERICAN CONVEYOR CO.
1113-17 W. Adams St., Chicago 7, Ill.

Con-Vay-It Special

New assembly of the company's incline belt conveyor replaces the gasoline engine or motor drive with a hydraulic motor to take driving pressure from the equipment on a tractor. The conveyor also mounts on the tractor as shown in the illustration. It can be employed to transfer wet concrete from a truck to a building form and to handle construction materials from the ground to elevated locations. It is brought to operating location on the tractor and is positioned vertically by operating hydraulic controls on the tractor.

If you write maker identify as IEN - 4946

MILLING . . Carbide cutter for slotting, commutator undercutting

Source: GAY-LEE CO.
69-73 W. 14-Mile Road, Clawson, Mich.

Solid carbide forms the blade of this new saw or milling cutter. It is brazed to a steel hub that provides the required support and means for driving. The cutter is available in a range of diameters to 3 in. from a minimum diameter of ¼ inch. No hub is employed in the smallest sizes.

If you write maker identify as IEN - 4947

STORING . . Adjustable pallet rack has load rating of 1½ ton per shelf

Source: BERGER MFG. DIVISION
Mahoning & Belden, Canton 5, Ohio

Structural uprights carry notched supports on 6-in. centers from 14 in. to 92 in. above the floor in this new rack. Tubular cross members act as supports for loaded pallets put into position by a fork lift truck. Maximum overall dimensions are 60 by 60 by 120 inches. Each assembly is supplied to specification. Solid shelves can be provided in place of the extra heavy pipe. Each rack is available in single or double-face design with single or double-entry arrangement.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 4948

NEW LOCKER CATALOG

ANSWERS ALL YOUR CLOTHING STORAGE NEEDS!

- Presents a Complete Range of Locker Types and Sizes.
- Tells How to Provide More Storage in Less Floor Space.
- Gives Newest Ideas on Locker Room Layout, Ventilation, etc.
- Shows How to Make "Custom-Type" Installations with Economical Standard Lockers.
- Lists Ways to Save Time and Money when Ordering.

penco *Perma Built* **STEEL LOCKERS**
SHELVING • CABINETS
Pioneer in Sheet Metal Products Since 1869

Send for Your Free Copy Today!

PENN METAL Corporation of Penna.
80 OREGON AVE., PHILA. 48, PA.

If you write maker identify as IEN - 4949

What Answers Can You Come Up With?

by Utilizing FULLERGRIPT

GRINDER SHROUD devised from Fullergript brush strip by maker of vertical die and surface grinder . . . concentrates coolant and protects operator from spray.

REMOVING GLOSS from molded counter top accomplished by buffing cylinder with widely-spaced but spiralled Fullergript brush strips. Engineering trick was to work out angle of spiral giving an even buff.

NEW ANSWERS to puzzling problems can often be found with the brushing action of Fullergript strips. You are introduced to new vistas of mechanical possibilities. And our engineers will work with you. Simply write and ask for information from:

FULLER BRUSH — FULLERGRIPT — At home... in business, too

THE FULLER BRUSH CO., INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 2, CONN.

If you write maker identify as IEN - 4950

FREE!
Guide to industrial uses of Sundstrand Air Sanders

See how you can save time and money on production and maintenance jobs with *Straight-Line Action* Sundstrand Air Sanders. No swirls! No scratches! No pressure marks! Finish wood, metal, or plastics—flat or curved surfaces—with wet or dry sanding. Here are just a few of the uses pictured:

- Sanding filler on castings
- Preparing metal for priming and final finish
- Sanding plastics
- Wet sanding base coat on wallboard
- De-burring rivet holes on aircraft
- Polishing dies
- Refinishing boats, desks, work benches
- Sanding and rubbing fine furniture

Act now! Contact your local supplier or write for Bulletin MF5.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 4951

Installation of 10 Column Showers, Cincinnati Chemical Co.

THEY SELECTED BRADLEY COLUMN SHOWERS

Without the usual partitions of the 5-stall or 5-stall Bradley Showers, the Column Showers are otherwise complete with drain fittings, sprayheads, soap trays, mixing chamber for temperature control with hot and cold water control valves. Ready to install.

Floor space is saved and by placing Showers away from walls, wall water-proofing is not required and space may be used for lockers and benches.

Here's the answer to your Shower requirements at low cost. Write for Catalog 4701-CS. BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan Street, Milwaukee 1, Wisconsin.

BRADLEY Showers
Distributed through Plumbing Wholesalers

If you write maker identify as IEN-4952

MARSH GAUGES

-the finishing touch to a good product

Through long experience the users of your product have learned to respect the lasting accuracy of Marsh — the greatest name in pressure gauges. A Marsh Gauge on your product is truly a mark of quality.

The Marsh line embraces pressure gauges and dial thermometers of every required type, construction, size, range, finish.

Ask for this catalog covering your instrument requirements

MARSH INSTRUMENT CO.

Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept., 155 E. 44th St., New York, N. Y.

If you write maker identify as IEN-4953

LOOKS GOOD, WEARS WELL, PRICED RIGHT!

PIC STEEL UNIONS for Original Equipment

For 150# service Pics are ideal! 100% zinc plated . . . smart looking . . . sturdy. Ends can take heaviest wrenching because they're constructed of steel pipe coupling stock . . . and their uniform flat sides permit speedier installing with open end wrenches. Special wedge-type bronze seat assures tight, safe closure. The zinc plating even includes the threads for top rust protection. The price? Less than a galvanized — no more than a black malleable union!

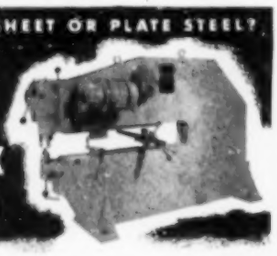
Write for FREE Samples

DART UNION COMPANY
132 Thurbers Avenue, Providence 5, R. I.

If you write maker identify as IEN-4954

WORKING SHEET OR PLATE STEEL?

LOOK at what PULLMAX CAN DO



STRAIGHT CUTTING

Straight cutting, circle cutting, free hand cutting, slot cutting, beading, folding, louvering and many variations of these operations . . . ALL ON ONE PULLMAX MACHINE! Easy to set up and change tools . . . seven sizes of machines work materials up to 11-32" in mild steel . . . also works stainless steels, non-ferrous metals, wire mesh and plastics.

CIRCLE CUTTING

WRITE FOR LITERATURE

FOLDING

SLOT CUTTING

BEADING

FREEHAND

See Us at the A.E.T.E. Show—Booth 1943
Write for tickets.

AMERICAN PULLMAX CO., INC.
2459 N. SHEFFIELD AVENUE CHICAGO 14, ILLINOIS

USEFUL INFORMATION

(Concluded)

If you write maker identify as IEN-4955

PRESSES . . How to calculate capacity described by instruction book and nomograph charts

E. W. Bliss Co.
1373-77 Raff Road S. W., Canton 10, Ohio

Pressure capacity, sustained work capacity, pressure and work requirements of a given job can be calculated for a press with the assistance of revised Bulletin 38, "Computations for Metal-Working in Presses." The 52-page book covers blanking and shearing, drawing and reducing, ironing, coining, sizing, forging, extrusion, mechanical press selection.

If you write maker identify as IEN-4956

RIVETING . . Use of the Hi-Shear rivet described in detail by new pocket instruction book

Hi-Shear Rivet Tool Co.
8922-26 Bellanca Ave., Los Angeles 45, Calif.

Line drawings and concise captions are employed in new 60-page "Riveting with Hi-Shears" book to describe the company's locking-collar rivet, where and why it is used, size selection, hole preparation, riveting methods with hand and power tools, inspection, removal methods, rivet types and identification, all from a shop production viewpoint.

If you write maker identify as IEN-4957

SHIPPING . . Postal rate chart gives up-to-date information on surface and air shipping

Pitney-Bowes Inc.
761-65 Pacific St., Stamford, Conn.

New postal rates are included in new wall chart which the company will send you on request. The chart measures 12 by 18 in., folds to file size, is printed on heavy paper. The front carries parcel-post rates in a table for surface and air shipping by weight and by zone. A map on the back and a rule enable you to mark out zones from your location.

If you write maker identify as IEN-4958

STEEL . . Reasons why it rusts and use of nickel to retard rusting in the atmosphere

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

H. R. Copson, research chemist for the company, is author of a technical paper which the company offers on request in 40-page reprint form. Title is "A Theory of the Mechanism of Rusting of Low Alloy Steel in the Atmosphere." Results from exposure tests on 71 low-alloy steels form the basis for the information presented. From these results the author draws conclusions as to how steel rusts and why nickel improves corrosion resistance of steel.

If you write maker identify as IEN-4959

STEELS . . Tell one type from another by spark tests shown in new instruction booklet

Carpenter Steel Co.
351 W. Bern St., Reading, Pa.

Drawings show individual spark streams for 13 of the company's standard tool and die steels in new 20-page "Simplified Guide for Spark Testing." Notes tell what to look for in each spark stream. Instructions tell how to prepare for a spark test, how various elements affect the sparks, how to distinguish steels with similar spark streams.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4960

BALL BUSHING

The BALL-BEARING for your

LINEAR MOTIONS

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and performance with BALL BUSHINGS! Now manufactured for ¼", ⅜", ½", ⅝", ¾", 1" and 1¼" shaft diameters.

THOMSON INDUSTRIES, INC.
Dept. I MANHASSET, NEW YORK

Write for descriptive literature and the name of our representative in your city.

Also manufacturers of SYLINES Bearings — DuPont NYLON with or without sleeve — for complete information and recommendations.

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as IEN-4961

SAVE TIME . . . SPACE ELEVATOR CAPACITY with

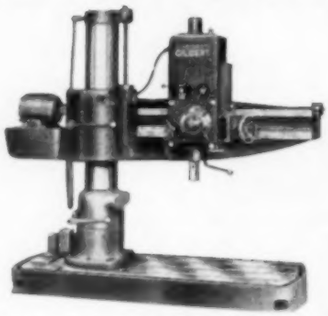
MATOT "DUMB WAITERS"

Space, time, labor and related savings are practically unlimited with MATOT "Not-so-dumb" dumb waiters—in factories, stores, institutions, hotels, restaurants—and also *in the home.* A MATOT dumb waiter takes up little room, requires comparatively light construction and can be hand or power operated—at minimums of both effort and current. See comprehensive SWEET'S CATALOG FILE, or write for free data.

D. A. MATOT, Inc.
1533 W. Altgeld St., Chicago 14, Ill.

If you write maker identify as IEN-4962

good head for fast work



This head lets you see what you're doing; keeps controls at the comfort level; responds quickly with minimum effort. Correct gear ratio makes manual head traversing easy, lets you spot the head right on the "O". Gilbert "heft" in the right places minimizes deflection, holds accuracy even when drilling large work at outside limits of head and arm travel. Write for new Bulletin No. 349. *Those who buy Gilbert buy Gilbert again.*

THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN-4963

NEW FRACTIONAL to 20 G. P. M. POLYETHYLENE PUMPS

WITH NATURAL RUBBER, GUM, NEOPRENE, BUNA, NYCAR

"flex-i-liners"

ESPECIALLY DESIGNED TO HANDLE HCl, HF, NaOH, H_2SO_4 DISTILLED H_2O, $FeCl_3$, $Ca(OH)_2$ and many others

Fluid only contacts outer surface of "FLEX-I-LINER" and inner surface of body block. 35 combinations of rubber and plastic "flex-i-liners" and pump body blocks. Models available from fractional to 20 G.P.M., Vinyl and Compar "flex-i-liners" also available in pumps to 5 G.P.M. capacities. Widely used in chemical, food, pharmaceutical and other process industries—wherever non-contaminating pumping is required. Excellent for slurries. Write for literature.

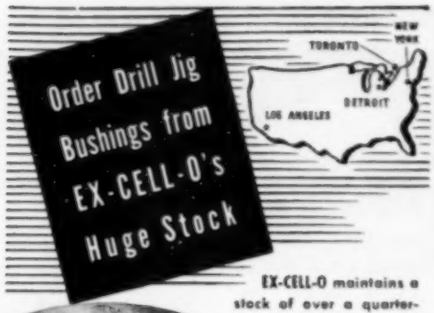
FLUID NEVER TOUCHES METAL

NO STUFFING BOXES
NO GASKETS
NO VALVES
SELF LUBRICATING

VANTON PUMP CORP.
EMPIRE STATE BLDG., Dept. IES, New York, N. Y.

VANTON NON CORROSIVE CONTAMINATING flex-i-liner PUMPS

If you write maker identify as IEN-4964

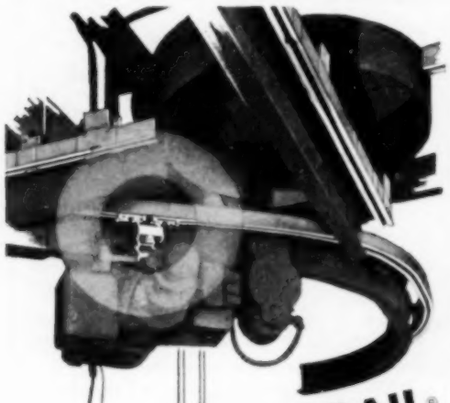


EX-CELL-O maintains a stock of over a quarter-million drill jig bushings in Detroit and also ample supplies in New York, Los Angeles, and Toronto. Orders for standard sizes can be filled immediately. Write today for your free copy of Ex-Cell-O Bushing Catalog No. 35371.

XLO 31-0

EX-CELL-O CORPORATION
DETROIT 32 • MICHIGAN

If you write maker identify as IEN-4965



ELECTRIC FEEDRAIL® *Flexibility*

Simplifies Plant Problems

Feedrail system provides the power for a monorail hoist with slide switches and turntable in a sewerage disposal plant in Brooklyn, New York.

Feedrail is a flexible system of electrical distribution. It powers small or large hoists with equal ease. Mobile power trolley outlets supply power to crane or hoist. It's a simple problem to power a hoist on a curve, slide switch, transfer, turntable or spur run. Easily and quickly installed it provides a safe, dependable power source and requires little or no maintenance.

Feedrail offers new freedom in planning plant layout and production schedules. Trolleys roll smoothly within the enclosed track and current is immediately available where needed. Trolleys are added in a matter of minutes without shutting off the power to break "bottlenecks" at overloaded work centers. This flexibility is a vital factor in lowering costs and raising production volume.

Write for literature.

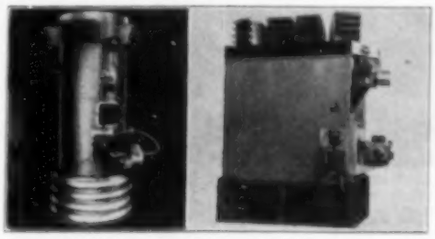
Sold by leading electrical distributors. 46-D

ELECTRIC FEEDRAIL® *Never Becomes Obsolete*
FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
135 BARCLAY STREET · NEW YORK 7, N. Y.

If you write maker identify as IEN-4967

HEATING . . Direct fired space units, for gas and oil, 1,500 to 22,000 cfm.

Source: PRAT-DANIEL CORP.
4 Meadow St., South Norwalk, Conn.



A size for any requirement

Rectangular unit, to the right in the illustration, has been added to the company's Thermobloc line of direct-fired space heaters, previously described IEN-9078-50. The new unit is larger than preceding models in the line and has capacity to heat an area ranging from 16,000 to 24,000 square feet. It has 2,000,000 btu. per hour output.

At the same time the company announces a new combination oil-gas burner at which either fuel can be selected by operating a push button. This burner is available on all of the sizes in the Thermobloc line including the small cylindrical assemblies as shown to the left in the illustration.

Model 2000 employs twin heat exchangers arranged in the form of a "V" to scrub the heating surfaces. Adjustable outlets at the top of the housing can be placed in any position through a complete circle. Single ducts can be run from any of the individual outlets to adjoining rooms. A plenum chamber can be supplied in place of the four diffusers.

If you write maker identify as IEN-4968

MARKING . . Electric iron designed to brand serial numbers

Source: HEXACON ELECTRIC CO.
155 W. Clay Ave., Roselle Park, N. J.

List is $25, $28.50 and $35

Numerals from 0 to 9 are mounted around the electrically heated head of this new iron. Space is provided for additional characters on the front head face. The iron is available for operation on 110 or 220-volt ac. or dc. It is equipped with a 6-ft. extension cord and plug. Application is in branding numbers or dates on products such as batteries, barrels, seats.

The numerals are made of an alloy that resists scaling and corrosion and that will transmit heat readily from the head element. The head back of the numerals is hexagon in shape so the iron can be secured in a vise or fixture in addition to employing it as a portable tool. Three numeral sizes are ⅜, ½ and ¾ inch. Desired size can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 99

If you write maker identify as IEN-4969

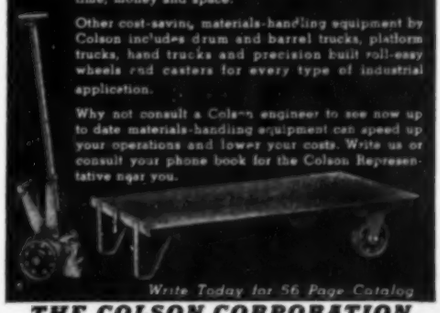
In Materials-Handling the Colson® LIFT-JACK System

Lets 1 man do the work of 2

Through production, in and out of storage, on and off freight cars or trucks, Colson Lift-Jacks with wood or steel semi-live skids can easily double the efficiency of conventional hand trucks. You save time, money and space.

Other cost-saving, materials-handling equipment by Colson includes drum and barrel trucks, platform trucks, hand trucks and precision built roll-easy wheels and casters for every type of industrial application.

Why not consult a Colson engineer to see how up to date materials-handling equipment can speed up your operations and lower your costs. Write us or consult your phone book for the Colson Representative near you.

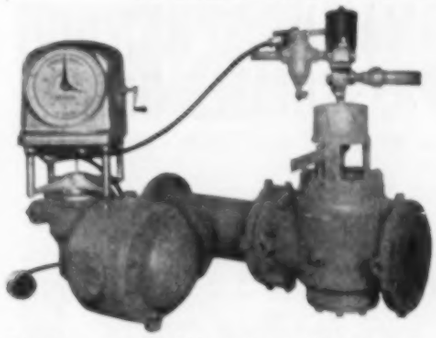


Write Today for 56 Page Catalog

THE COLSON CORPORATION
ELYRIA, OHIO

CASTERS . . . . LIFT-JACK SYSTEMS . . . . INDUSTRIAL TRUCKS

If you write maker identify as IEN-4970



Jacketed Metering Systems

for automatic batching of viscous materials

The Fluidometer System is available either jacketed or unjacketed. A jacketed Fluidometer system will handle heavy, hot, sticky materials as easily, as safely and as accurately as the unjacketed Fluidometer handles light, easy running liquids.

Fluidometer's accuracy and dependability have been proved in years of service under widely varying conditions. Anything that can be handled through a meter can be automatically batched by Fluidometer.

Write for Bulletin FL-49.

HETHERINGTON & BERNER INC.
725 Kentucky Avenue — Indianapolis 7, Indiana

If you write maker identify as IEN-4971

it's POWERFUL... it's a HEIN-WERNER!

On small jobs, or big jobs—wherever powerful hydraulic force is needed—you'll find a Hein-Werner Hydraulic Jack will fill the bill.

Every model in this line is powerful . . . dependable . . . versatile . . . A Hein-Werner Jack can be effectively used for lifting, pushing, pulling, bending, straightening, and pressing operations.

Made in models of 3, 5, 8, 12, 20, 30, 50, and 100-tons capacity . . . See your industrial distributor or write us for details.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION
Waukesha, Wis.

If you write maker identify as IEN-4972

HEVI DUTY ELECTRIC COMPANY

FOR TEMPERATURES FROM 1700° F. TO 2600° F.

Use The

HEVI DUTY G-05-PT FURNACE

Inside Diameter
4½" W. x 7" L. x 2½" H.
3500 WATTS
Write for Bulletin LAB-250A

- ☆ Less Heat Loss — Improved Insulation and No Rheostats
- ☆ Better Control — Through a 48 Step Tap Changing Transformer
- ☆ Easily Replaceable Silicon Carbide Type Heating Elements
- ☆ Indicating Pyrometer and Tap Switches Mounted in Sliding Drawer

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES **HEVI-DUTY** ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN-4973

AMAZING SPRAY GUN PRESSURIZED BY CO_2!

NO HOSES • NO COMPRESSOR •
NO ELECTRICAL OUTLETS •
NOTHING EXTRA TO BUY!

BECKER
PRESSURE-TYPE
SPRAY GUN
USED EXTENSIVELY IN FACTORIES, HOMES, FARMS, INSTITUTIONS

For:
- Paints
- Oils
- Varnishes
- Enamels
- Fire-Proofing
- Decorating

Handy for hundreds of industrial uses where expensive, heavy, cumbersome compressor type spraying is unnecessary. Becker Spray Gun is ruggedly built; heavy gauge (21 liquid oz.) steel container, cast aluminum head, brass and stainless inserts. Powerful CO_2 cartridges spray up to one container-full. See your Distributor or order direct, postpaid. Extra CO_2 cartridges at your dealer's or 10 for $1 postpaid.

SULLIVAN-BECKER CO., DEPT. 192-E, Kenosha, Wis.

If you write maker identify as IEN-4974

VULCAN
ELECTRIC SOLDERING TOOLS

PLUG TIP

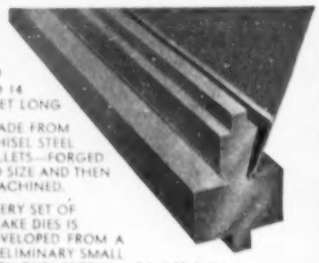
All parts replaceable by simply removing 4 screws.

50 WATTS 1/4" TIP DIA.
100 WATTS 3/8" TIP DIA.
150 WATTS 3/8" TIP DIA.
150 WATTS 1/2" TIP DIA.
200 WATTS 5/8" TIP DIA.
300 WATTS 7/8" TIP DIA.

VULCAN ELECTRIC COMPANY
DANVERS 5, MASS.
Screw Tip, Plug Tip, Pencil and Melody Electric Soldering Tools, Electric Solder Pots and Glue Pots, Electric Branding Irons, Electric Heating Units.

If you write maker identify as IEN-4975

BRAKE DIES



- UP TO 14 FEET LONG
- MADE FROM CHISEL STEEL BILLETS—FORGED TO SIZE AND THEN MACHINED.
- EVERY SET OF BRAKE DIES IS DEVELOPED FROM A PRELIMINARY SMALL "TRY-OUT" SECTION—TO GET THE RIGHT SHAPE ON YOUR MATERIAL, THEN
- WE MAKE YOUR SET OF PERFECT BENDING DIES.
- BY THE MAKERS OF THE FAMOUS SEMCO NIBBLER PRESS.

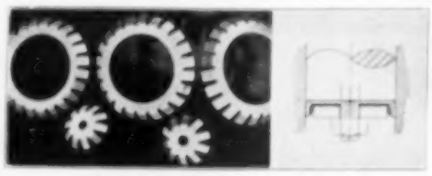
Write for Latest Literature. Ask for Estimates.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN-4976

SEALING . . Formed brass ring holds a cup gasket in sealing position

Source: HPL MFG. CO.
15175 Miles Ave., Cleveland 28, Ohio



For pumps, presses, cylinders, jacks

The sealing lip of a cup gasket is held outward against a cylinder wall by application of this new Type ES-11 finger-type brass ring. It is made of 0.01-in. strip brass and is available in sizes ranging from 1¼ to 2⅞ in. based on the outside diameter of the gasket.

It applies under the gasket washer, does not materially increase friction or wear on the packing since the pressure exerted is only sufficient to support the packing lip against the cylinder wall. The company's strip design of expander, previously described IEN-SS08-49, is recommended for gaskets measuring 3 in. or more in diameter.

If you write maker identify as IEN-4977

WELDING . . Non-synchronous control operates spot and projection machines

Source: SQUARE D CO.
4039-43 N. Richards St., Milwaukee 12, Wis.

Ask for Bulletin 8992

Four tubes plus a valve relay and a firing relay are employed in this new simplified design of the company's resistance-welder control. The tube circuits are fail safe. Power-tube firing is synchronized to minimize transients and load on the welding transformer. The timer panels are interchangeable and quickly detachable from the cabinet door. Plug connectors complete the circuits to the power pack in the cabinet. Overall dimensions are 15 by 15 by 37 inches.

If you write maker identify as IEN-4978

MACHINE TOOLS . . Pictures of the men who were building them in 1903 presented in booklet

Bennett Machinery Corp.
372-76 Alwood Road, Clifton, N. J.

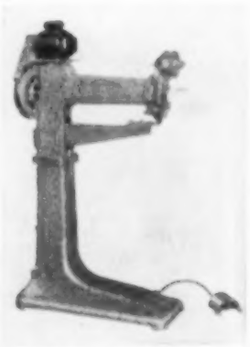
If you did not receive a copy of "Pioneer American Machine Tool Builders" in its recent initial mailing, the company will be happy to send you one on request. The 16-page booklet reproduces photographs of 96 men who were leading American machine-tool builders in 1903. They range from A. E. Baker of Baker Bros. to W. C. Young of W. C. Young Mfg. Co.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4979

A PAID NEWS ADVERTISEMENT BY BOSTITCH

ASSEMBLING—Wire stitcher fastens metal parts up to 10 times faster



Bostitch Metal Stitchers are reported to provide the fastest known method of fastening aluminum, copper and cold-rolled steel sheet forms to each other and to rubber, plastics, fabrics.

These powerful machines manufacture their own staples out of heavy steel wire and drive them as fast as 285 stitches a minute. Because of this power and speed, many users report 50% to 90% savings in assembly time as compared with cementing, spot-welding, riveting, bolting.

Other advantages of fastening metal parts with Bostitch metal stitchers are that they provide a self-inspecting method and require less skill on the operator's part for high-speed production.

Bulletin 273 shows how and where Bostitch Metal Stitchers save time, labor, and money.

BOSTITCH
460 Mechanic Street, Westerly, Rhode Island

If you write maker identify as IEN-4980

For Pressure Loads from 5 lbs. to 40,000 lbs.

In Sizes from ¼" to 24"

SAFETY HEADS
for Instant, Unrestricted
RELIEF

Bland, Corrosive, Viscous or Fluid Liquids • Vapors • Gases • Air

Affording the fastest, most complete relief of over-pressure, BS&B Safety Heads can be used both as primary or secondary relief devices on your pressure vessels or lines. Designed to rupture within ± 5 lbs. of pre-determined pressure, Safety Heads are precision made for specific applications, in various metals and sizes.

BS&B SAFETY HEADS
BLACK, SIVALLS & BRYSON, INC.
SAFETY HEAD DIVISION, DEPT. 9-L6
7500 E. 12TH ST., KANSAS CITY 3, MO.

If you write maker identify as IEN-4981

Can you use DUCTILE BISMUTH WIRE in your product?

Send for your copy of new 24-page booklet, "Ductile Bismuth Wire," giving detail physical properties along with suggested uses and a table of 36 references to the technical literature.

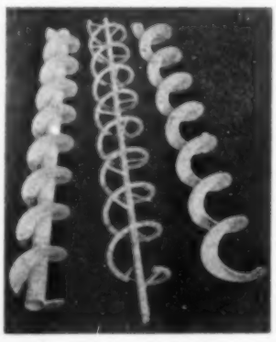
Availability of bismuth metal in ductile wire form opens up new fields for its unique properties and characteristics.

These include resistance change in a magnetic field, voltage change with change in a magnetic field, and high thermoelectric power. Bismuth is the most sensitive metal known for use in thermocouples.

FITZPATRICK
ELECTRIC SUPPLY COMPANY
442-46 Irwin St. Muskegon, Mich.

If you write maker identify as IEN-4982

WORMS AND SPIRALS
to bore, convey, extrude, feed, process



Let us make them for you to your specifications or supply them from stock in standard designs immediately

Send your blueprints for quotation

JAMES EAGEN & SONS
WEST WYOMING, PA.

If you write maker identify as IEN-4983

EFFICIENT IN TEMPERATURES FROM—85° TO 500° F.

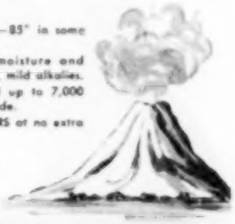
VARGLAS SILICONE

Electrical Insulating Tubing and Sleeving

Meets Mil-I-3190 Class "H" Specifications

A combination of Varglas Sleeving made with continuous filament glass yarns and Silicone High Temperature Resin. Varglas Silicone is the only Class "H" insulation with these features:

FLEXIBLE from 500° to —85° in some grades.
RESISTANT to flame, moisture and fungus, abrasion, acids, mild alkalies.
DIELECTRIC PROTECTION up to 7,000 volts depending on grade.
AVAILABLE IN 10 COLORS at no extra cost.



In addition to our regular line of Silicone sleeving and tubing, we also make Varglas Silicone treated tying cord and lead wire. Varflex Corp., Rome, N. Y.

VARFLEX Sales Co., Inc.
306 N. Jay St., Rome, N. Y.

If you write maker identify as IEN-4984

Sign of Dependability

Dependability . . . the kind you get from the high-tensile strength fabric and the rugged, tight-grip adhesive of U.S. Security Tape. What is more, Security has high dielectric strength, is straight-tearing, non-ravelling, has no pinholes to cause troublesome leaks.

U. S. Security Rubber Tape is unbeatable for perfect splicing when used with U.S. Security Friction Tape.

Quality Products of

U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Tape Department, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN-4986

PACKAGING . . Cushion type wrapping protects work in transit and storage

Source: CADILLAC PRODUCTS INC.
2302 Gainsboro, Ferndale 20, Mich.

Cadwrap trade names a new patented wrapping material consisting of sheets of crepe paper on the two sides of a cushioning layer of excelsior. The material is tailored to fit each part or product on which it is to be applied. It is held in place by Cadclips, also patented. Work that lends itself to this type of protective packaging includes fenders, hoods, decks, doors and similar products made of metal or non-metallic materials subject to denting or marring.

If you write maker identify as IEN-4987

PLASTIC . . Fiberglas reinforced tube in range of sizes from 4 to 36 inches

Source: REFLIN CO.
8523-27 Higuera, Dept. B-11, Culver City, Calif.

Use suggestions upon request

The company announces availability in unlimited quantities of its new reinforced plastic tube in standard sizes from 4 to 10 in. measured over the outside diameter and with wall thickness minimum at 0.03 inch. Larger diameters to 36 in. can be supplied on special order. The material has tensile strength to 35,000 lb. per sq. in. and flexural strength to 65,000 lb. per square inch.

It is available in straight sections to 20 ft. in length and can be employed with standard fittings in regular pipe installations. The material remains stable for continuous operation in a temperature range between minus 60 and plus 230 deg. F. It can be worked with standard machine tools for sawing, cutting, drilling, threading and joining. The plastic is light in weight and resistant to corrosion.

If you write maker identify as IEN-4988

MILLING . . Motor driven machine particularly to undercut commutators

Source: GAY-LEE CO.
69-73 W. 14-Mile Road, Clawson, Mich.

The table in this new milling machine measures 5 by 26 in. and is mounted on the machine so it can be tilted for best visibility. It is hand fed under a milling cutter carried on a Parker Majestic high-speed precision spindle. A motor is V-belt connected to drive the spindle at speeds to 7,500 rpm. The machine will take armatures to 6 in. in diameter on shafts to 7 in. in length. It will undercut as many as 100 commutators per hour.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-4989

NEW PLANT MAKING AGRICULTURAL AMMONIA USES FRICK REFRIGERATION

The Mississippi Chemical Corp. at Yazoo City uses three Frick compressors to hold 2,000 tons of liquid ammonia in the spherical tanks (at upper right) by reducing the pressure and temperature.

This eight-million-dollar plant, built by 10,000 stock-holding farmers, produces both liquid ammonia and solid ammonium nitrate for use as fertilizer.

Three Frick Compressors in Service at the Mississippi Chemical Corp.

Installation by Munford Engineering Co., Frick Distributors at Jackson.

For that all-important cooling job of YOURS, get in touch with

FRICK & Co.

If you write maker identify as IEN-4990

FOR YOUR TOUGHEST JOBS

NEW OTC

30 TON POWER-TWIN Hydraulic Puller

BIG BROTHER TO THE FAMOUS 17½ TON POWER-TWIN

Dynamite . . . the tough 30 ton OTC Power-Twin Hydraulic Puller . . . saves hours and dollars on every overhaul job. Light . . . compact . . . safe remote control. Gives 30 tons of power with only 100 pounds of pump pressure. Complete Hydraulic Puller sets for both 30 ton and 17½ ton Power-Twin.

WORKS WONDERS

Power-Twin pulls or installs bearings, gears, pinions, shafts, studs, wheels, pulleys . . . also performs as a heavy jack, straightener or compressor.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN-4991

Chicago MOUNTED Wheels

. . . now even better with 79E BOND

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & Mfg. Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN-4992

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE BETTER TOOLS AND DIES

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on: how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

INCLUDING 80-PAGE ALPHABETICAL SELECTOR, BOUND RIGHT IN THE BOOK, SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2
Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.
NAME _____ TITLE _____
FIRM NAME _____
MAILING ADDRESS _____
CITY _____ STATE _____
(Please print)

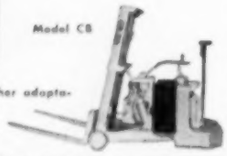
If you write maker identify as IEN-4993

MOTO-TRUC'S 6 basic models

QUICKLY ADAPTABLE TO ANY PROBLEM IN THE "WALKIE" FIELD

A "twist of the wrist" does it.

Moto-Truc's Pallets, Platform or Hi-lift, with all controls incorporated in the hand grip, are simple and easy to operate. They are preferred by operators and maintenance men. All welded construction and that extra power saves time, money and man hours. CUT THAT COSTLY "DOWN-TIME."



Model CB

MOTO-TRUC MODEL CB is another adaptation for ramps and inclines. 18-volt motor drive handles loads up to 2,500 lbs. Any type mast available.

WRITE FOR BULLETIN NO. 51 TODAY

THE MOTO-TRUC CO.
1953 E. 59th ST., CLEVELAND 3, OHIO
PALLET, PLATFORM AND HI-LIFT TRUCKS

If you write maker identify as IEN-4994

HOW ABOUT IT?

is YOUR plant clean enough for precision defense production?

Model 218

Don't sabotage your plant facilities with dirt and debris. Clean plants measure up to defense production standards.

Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN-4995

FOR SPEEDY INSTALLATION... WITH MINIMUM INTERRUPTION OF WORK.....

Count On **CLOW** (Threaded)* **CAST IRON PIPE**

WHEN YOU REPLACE OR EXPAND. Leading engineering firms specify Clow Threaded Cast Iron Pipe for downspouts, waste and vent lines because of its corrosion-proof qualities and lifetime service.

Clow Threaded Cast Iron Pipe can be cut and threaded on the job with ordinary tools of the piping trade. Available with plain or threaded ends in 3, 4, 5, 6, 8 and 10" sizes in 18' lengths. Also furnished with integral calking hub on one end (other end plain) in 4, 6 and 8" sizes.

Write for Form 4-26-50 to: JAMES B. CLOW & SONS, 201-299 N. Talman Ave., Chicago 80, Illinois.

*No, the same outside diameter as steel or G.W.I. pipe

JAMES B. CLOW & SONS
Wholesale Distributors of Pipe, Valves and Fittings for Industrial Use

If you write maker identify as IEN-4996

COMMUNICATING . . Re-entrant speaker for plant yards, platforms, departments

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.

Replaces cone speaker

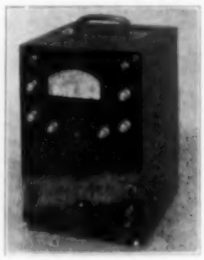
Aluminum cover attached to the cast-aluminum base encloses the removable diaphragm unit in this new weather-proof Type MI-6441 speaker. It serves as a low-powered voice-paging unit or as an efficient microphone for talk-back installations. It can be applied indoors or outside. The mounting arm and throat cell are cast on the base. The aluminum flared bell and reflector are mounted on the base in an arrangement that permits aiming the unit as required. Distribution angle measures 120 degrees. Finish is in dark gray enamel.

Power rating is 12 watts with sensitivity at 105 db., frequency response at 350 to 10,000 cps., impedance at 16 ohms. Overall dimensions are about 16¾ in. in length and greatest diameter. Weight is 2½ pounds.

If you write maker identify as IEN-4997

METER . . Electronic instrument for readings of voltage, resistance

Source: SOUTHWESTERN INDUSTRIAL ELECTRONICS CO.
2829-33 Post Oak Road, Dept. 461, Houston 19, Tex.



List is $620

Model R is a new vacuum-tube voltmeter particularly intended to measure dc. potentials. It is provided for this purpose with an extended scale adjustment to read small percentage changes over the full range. The instrument can be set to measure from 1 to 1,000 volts full scale or from 1 to 1,000 millivolts full scale. It provides a resistance range in a number of steps from X1 to X10 to the sixth power.

Adjustment is provided for extended ohms range also. The instrument will drive a 1-ma. recorder. It has a gain of 200 and a frequency range of 0 to 100 kc. Overall dimensions are about 9 by 10 by 14 inches. Weight is 34 pounds. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN-4998

CASTINGS . . Product design ideas are presented in series of data sheets on castings

Superior Steel & Malleable Castings Co.
307-11 Graham Harbor, Benton Harbor, Mich.

"Case Histories" is title of continuing series of individual data sheets, each on a specific example of a steel casting. They show how to utilize cast-weld construction, how to redesign a part to minimize shrinkage, redesign to prevent failure, redesign to improve appearance. Your name will be added to the list to receive them on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

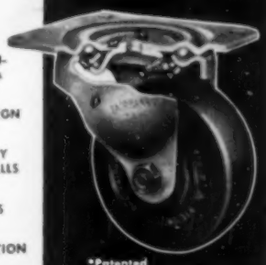
If you write maker identify as IEN-4999

NEW Fairbanks Series "23" Double Ball Race SWIVEL CASTER

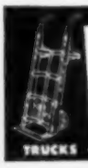
STRONGER ON EVERY POINT

The NEW Fairbanks Series "23" Double Ball Race Swivel Caster* line is designed for greater load carrying capacity in the medium duty field.

- NO KING-PIN it's eliminated!
- "LOCK-WELD" CONSTRUCTION retains perfect alignment!
- PATENTED LEG DESIGN resists distortion!
- LARGER SECONDARY RACEWAY AND BALLS work easier!
- COINED RACEWAYS improve with use!
- PRESSURE LUBRICATION reduces friction!



*Patented



THE Fairbanks COMPANY
393 LAFAYETTE STREET, NEW YORK 3, N. Y.
BRANCHES: Boston 10 • Pittsburgh 22 • New York 3 • Rome, Ga.

TRUCKS • VALVES • DART & PIC UNIONS • CASTERS

If you write maker identify as IEN-5000

Safety STEEL STEP LADDERS

FOR EVERY NEED

With safe, sure footing anybody reaches high places easier, with a sense of security that permits complete freedom of action to get the job done. Ballymore Ladders are sturdy and safe, can't roll when in use or kick out, have lots of foot room, strong hand rails. All welded construction. Ball bearing casters permit easy movement without lifting. One to three steps without hand rails. Three to eight steps with hand rails. "Special" models.

WRITE TODAY FOR COMPLETE CATALOG

BALLYMORE CO
WAYNE 4, PA.

If you write maker identify as IEN-5001

LOW COST PROTECTION FOR MAN AND MACHINE

ELASTICONE® **GUIDE PIN COVERS**

JUST SNAP INTO PLACE

NO TOOLS REQUIRED

NO INSTALLATION COSTS

Elasticones are manufactured in stock sizes. Specify O.D. of bushing and full open height of set when ordering.

Protects Pins and Bushings from nicks, scratches . . . prevents injuries to Die Setters & Operators. Write for full information.

CENTRAL SAFETY EQUIPMENT COMPANY
2200 E. HUNTINGDON STREET, PHILADELPHIA 25, PA.

If you write maker identify as IEN-5002

GOVERNMENT REQUIRED on all Defense Contracts

TRANSPARENT WORK RECORD HOLDERS

Because they keep work records clean and understandable, reduce costly mistakes in office and factory, and step up production, transparent work "ticket" holders are a required "must" on defense contracts. T. P. A. envelopes by NAPLASCO are the quality leaders, featuring crystal clear plastic, leatherette bindings and reinforced corners. They are needed wherever men work . . . to eliminate "Misunderstands", confusion and alibis . . . and will save you time, money and headaches.

Naplasco ***T. P. A. HOLDERS**

Come in sizes and styles to meet your special needs . . . for work records, job ticketing, material control and many other uses.

Write for low prices. FREE SAMPLE while supply lasts.

TRADE MARK

Makers of Binder envelopes • Blue Print Holders
Workshop Envelopes • I. D. Card Holders
Billfold Inserts • Plastic Specialties.

NATIONAL PLASTIC COMPANY
16 EAST 22ND STREET, NEW YORK, N.Y. (GRamercy 7-1399)
8 SOUTH DEARBORN, CHICAGO, ILLINOIS (CEntral 6-0025)
Main Office and Factory
2591 E. FOOTHILL BLVD., PASADENA, CALIF. (SYcamore 1-8147)

If you write maker identify as IEN - 5003

ERTEL STAINLESS STEEL Centrifugal & Self-Priming PUMPS

with minimum of parts...

Meet requirements for handling corrosive liquids in the *Drug, Chemical and Food field.*

MODEL SCP CENTRIFUGAL — MODEL ESP SELF-PRIMING

Write for fully illustrated Literature

ERTEL ENGINEERING CORPORATION

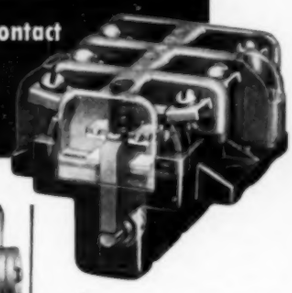
KINGSTON 4, NEW YORK
Branch Office & Showroom Located in New York City

COMPLETE LINE OF *Liquid Handling Equipment*

If you write maker identify as IEN - 5004

A new line of CUTLER-HAMMER SWITCHES

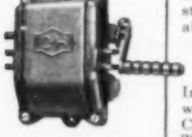
utilizing an identical common contact structure



ROLLER LEVER SPRING RETURN TRACK TYPE SWITCH

FORK LEVER TWO POSITION TRACK TYPE SWITCH

Track type switches have clamp on operating lever to mount at any angle on shaft . . . also on opposite end of shaft for opposite side track installation. Overtravel in both directions. Cast iron NEMA 1 Standard, NEMA 3 Watertight or NEMA 5 Dusttight enclosure. Tapped for conduits. Two pole or three pole with contacts normally open and/or normally closed, with or without overlap. 1.25 amps at 250 volts d.c.



FOOT OPERATED MASTER SWITCH

Double pole, two wire remote control, hold down type. Double break contacts, normally open, convertible to normally closed or normally open and normally closed. Cast iron, split type, NEMA 1 Standard, NEMA 6 (Dusttight) or NEMA 7 (Class I, Group D).

CUTLER-HAMMER announces a new line of multi-purpose switches utilizing an all-new simplified identical contact structure. These switches are for use in the control circuits of automatic starters on a wide variety of machines such as woodworking, tire making, machine tools, steel mill equipment, hoists, conveyors, crane bridges, etc.

Features of the new contact structure include:

Standardized and interchangeable. This structure is identical with that used in other Cutler-Hammer limit switches, mill accessory switches, etc. It is completely interchangeable through the line and simplifies problems of spare parts and replacement.

Simplified. The contact structure is reduced to very simple elements. Easy to understand. Easily accessible. Easy to renew parts.

Sturdy construction. Cam and roller operated. Twin break contacts of "fine" silver, arc-resistant molded supports, etc. make this contact structure long lived and dependable. Small and compact.

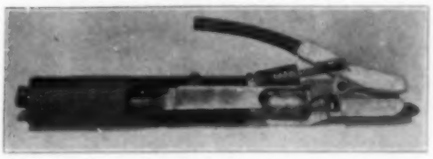
Write for descriptive sheets on any of these switches. CUTLER-HAMMER, Inc., 1378 St. Paul Ave., Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ontario.

CUTLER-HAMMER MOTOR CONTROL C-H

If you write maker identify as IEN - 5006

WELDING . . Arc electrode holder, insulated design, rates 500 amperes

Source: ERICO PRODUCTS INC.
2068-72 E. 61st Place, Cleveland 3, Ohio



Cable is welded in

Type B is new design of the company's Caddy electrode holder featuring complete insulation as compared with the semi-insulated Type A, previously described IEN-11624-51. Weld assembly is made with the cable by the company's Cadweld process to assure permanent solid connection as in the previous assembly. A cable gripper at the rear of the steel body prevents flexing at the weld and eliminates need to insulate the connection. The insulators are made of reinforced alkyd. Spring pressure on the jaw is adjustable.

If you write maker identify as IEN - 5007

CORROSION PROOFING . . Oil in 12-ounce pressurized container

Source: MITCHELL CHEMICAL CO.
2444-48 Main St., Stratford, Conn.

Spray condenses to solid film

Metal Guard is a new general-purpose corrosion-preventive oil that also has good lubricating qualities. It is packaged in a pressurized container for spray delivery upon pressing a button. The small container is handy to carry and the spray can be penetrated into areas, normally difficult to get at, where corrosion is likely to start. The oil will displace water so it can get underneath surface wetness to protect the finished metal from rust and corrosion.

If you write maker identify as IEN - 5008

RECTIFYING . . Selenium equipment, transformer and control for dc. supply

Source: INDUSTRIAL RECTIFIER CO.
120 Cedar St., Room 401, New York 6, N. Y.

About $127

Current rating is 10 amp. on continuous duty with dc. output voltage variable to a maximum of 28 volts in this new Model-1028 rectifier. Input is on 110-volt ac. Assembly is in a steel cabinet with corrosion-resistant crackle finish. Overall dimensions are 15 by 9 by 11½ inches. Both input and output are protected against overload. An "on-off" pilot lamp is on the face.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5009

"MIRROR" INSIDE STAINLESS STEEL TUBE ENDS NEED FOR MACHINING OPERATION

SMOOTH SURFACE inside a tube, free from pits, scratches, marks and mars was the paramount need of a Superior customer. Before they talked the problem over with us a machining operation was required on each part. Superior was able to supply tubing to meet their needs with a bright, clean, smooth, mirror-like inside finish to eliminate the extra operation. At the same time physicals were held low to prevent stress cracking following soldering.

YOU, TOO may be using fine small tubing and have a fabrication, application or assembly problem. Superior is ready, willing and able to help you toward the solution. Check your needs against Superior's production of tubing in all analyses from .010" to ⅝" O.D. and in certain analyses (.035" max. wall) up to 1⅜" O.D. For information write today.

SUPERIOR TUBE COMPANY
2016 Germantown Avenue
Norristown, Pennsylvania

If you write maker identify as IEN - 5010

CASH-ACME *Valves* DEMANDED BY INDUSTRY EVERY-WHERE

Type MR Relief Valve

water pump manufacturer specifies CASH-ACME

This leading manufacturer of pumps insists on a relief valve that will last the life of the equipment.

Performance tests proved CASH-ACME to be the best choice. Precision-built of quality materials by craftsmen with over a quarter century of experience, CASH-ACME Automatic Valves are used by more and more industries everywhere. Dependable, consistent performance year after year, without failure, cuts replacement cost to a minimum. Find out how CASH-ACME can help with the successful operation of your products. Write today.

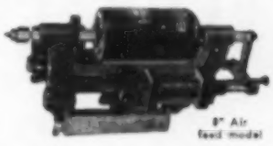
CASH ACME SILENT SENTINEL *Automatic Valves*

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

If you write maker identify as IEN - 5011

Precision Hi-Speed Drilling in Metal, Wood, Plastic or Composition—.004" - .156".

Check These 9 Features



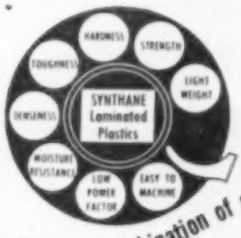
8" Air feed model

- Fingertip variable speed
- Fast approach air feed
- Hydraulic feed control
- Electric or manual controls
- Deep hole drill cleaning
- Sensitive precision spindle
- 1000-10,000, 2500-15,000 RPM
- Can be mounted at any angle, with hand or power feed
- Price 8" model, hand feed, from $130.00. Air feed model (as shown) from $238.50.

Write for helpful bulletin

The ELECTRO-MECHANO CO.
267 E. ERIE ST. MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 5012



Dial the combination of properties you need

Synthane laminated plastics have a wide variety of valuable mechanical, chemical and electrical properties—and have them in combination. Synthane combines, in one easy-to-machine material, light-weight, strength, chemical and moisture resistance, hardness, toughness, denseness, high dielectric strength, high dielectric constant and low power factor. And many more. Why not find out more about this unusual material today? Just clip and mail the coupon for the complete Synthane Catalog.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

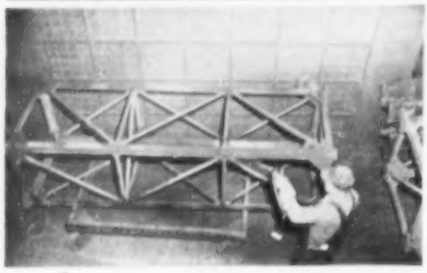
SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
Please send me the new Synthane Catalog at once.

Name_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 5013

WHO SAID PAINT OVERSPRAY REMOVAL WAS A PROBLEM?



This RP Paint Arrester Installation is Economical, Effective. Requires a Minimum of Floor Space.

A wall of R P Paint Arrestors and a blower solved the manufacturer's paint overspray removal problem in painting sections of structural steel in the installation above. Versatile R P Paint Arrestors can be the economical solution for your plant, too.

WRITE FOR FREE BOOKLET

Helpful, informative suggestions to solve your paint spray booth problems. Write today.

RESEARCH PRODUCTS CORPORATION
Dept. IE • Madison 10, Wis.

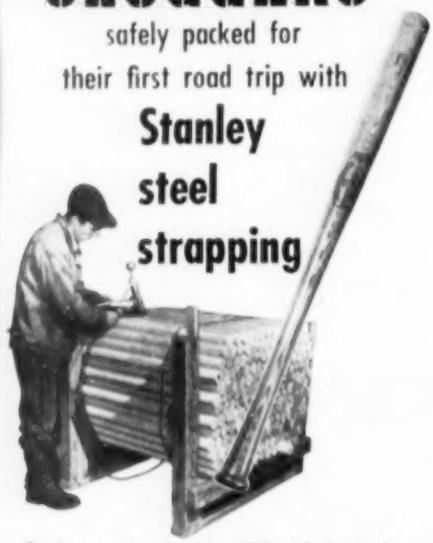
RP . . . PRODUCTS OF RESEARCH

If you write maker identify as IEN - 5014

"LOUISVILLE SLUGGERS"

safely packed for their first road trip with

Stanley steel strapping



● Here you see bundles of round billets of select northern white ash, ready for shipment to the Hillerich & Bradsby Company where they'll be made into world-famous "Louisville Sluggers".

To the shipper, The Norton Wood Products Co. of Tidioute, Penn., it was important that these baseball bats-to-be arrived at their destination undamaged. They solved this problem by calling in a Stanley Steel Strapping Representative, and with his help developed the bundle pictured here that proved successful in hundreds of subsequent shipments.

And this is just another example of how the Stanley Steel Strapping System and modern shipping methods save man-hours — materials — money — shipping almost any product.

The complete System includes tools, reels, seals, strapping, and accessories—everything needed for your application. The Stanley Works, Steel Strapping Division, New Britain, Conn. Branch Offices or Representatives in 32 principal cities. For full information send coupon below.

STANLEY STEEL STRAPPING AND CAR BANDING SYSTEMS

Reg. U. S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

The Stanley Works, Steel Strapping Division
204 Lake St., New Britain, Conn.

Please ask your Representative to call and explain the advantages of the Stanley Steel Strapping System to me.

Name _____

Firm Name _____

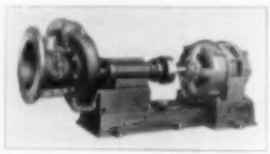
Street _____

City and State _____

If you write maker identify as IEN - 5016

PUMP . . Single stage centrifugal for paper pulp and waste paper stock

Source: MORRIS MACHINE WORKS
45 E. Genesee, Baldwinsville, N. Y.



Handles foaming pulp

Three sizes with discharge opening at 4, 5 and 6 in. are included in the company's recently improved Type ST-P pump. The unit is designed to handle high-consistency paper pulp and low-consistency waste-paper stock containing mineral matter that may be abrasive. In the latter case the pump is supplied with an enclosed impeller patterned after the company's dredge-pump design to seal at the impeller nose rather than by means of conventional rings. When clearances are increased by wear it is only necessary to adjust the rotating element axially toward the suction side. This can be done without dismantling the pump or the pipe.

Suction opening ranges from 12 in. in diameter for the 4-in. pump to 16 in. in diameter for the 6-in. assembly. Operating speed is maximum at 1,150 rpm. Head is to 150 feet. Capacity ranges from 200 to 500 gpm.

If you write maker identify as IEN - 5017

METER . . Electronic instrument reads voltage, resistance, current

Source: AMERICAN CHRONOSCOPE CORP.
314-18 W. First St., Mount Vernon, N. Y.

For general use

Model 601 is a new self-contained battery-operated meter to make measurements in ungrounded or symmetrical circuits, to read positive or negative dc. voltages without switching leads. It also serves in signal tracing by means of a test probe, to measure dynamic voltages in signal-carrying circuits without interference with the circuit action. Battery life is about 100 hours of normal operation. Overall dimensions are about 6½ by 5½ by 10 inches.

There are six dc. voltage ranges overall between 3 and 1,200 volts full scale, five ac. ranges between 3 and 300 volts full scale, six ranges from 1 to 100 ohms and six current ranges from 3 to 1,200 milliamperes.

If you write maker identify as IEN - 5018

CONTROLS . . For generator voltage by rotary regulator described in technical detail

Allis-Chalmers Mfg. Co.
909 S. 70th St., Milwaukee 14, Wis.

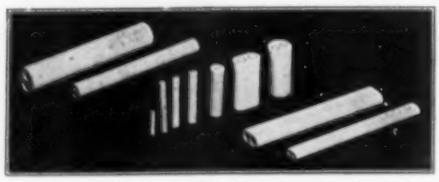
"Five Stages to Stability" titles new 8-page Bulletin 05-R-7776 which reprints a technical article originally published in the company's "Electrical Review." It tells how discrepancies in generator output voltage are corrected by a series of amplifying stages in the company's "Regulex" regulators. Circuit diagrams, performance curves are given.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5019

A PAID NEWS ADVERTISEMENT BY SAXONBURG POTTERIES

INSULATING . . . New Thermocouple Insulator Development



Representative units are shown

Body formula has been changed in the company's line of insulator units, and a different firing procedure is now employed to produce insulators that will withstand temperatures to 2,400 deg. F. coupled with excellent resistance to thermal shock. The new material is known as the ThermO Body. The insulators are available in standard and special sizes. Standard sizes are in stock.

The company has informed us that the ceramic units for use in electric heating appliances are suited also, particularly well, as thermocouple insulators in which the thermocouples are to operate in temperatures to 2,4000 deg. F. Material in each bead-type or sleeve-type unit is known as ThermO Body.

SAXONBURG POTTERIES
51 Della St., Saxonburg, Pa.

If you write maker identify as IEN - 5020

MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 5021

STRAIGHTEN COIL STOCK FOR PRESSES, SHEARS OR SLITTERS

WITH

LITTELL Variable Speed STRAIGHTENING MACHINES

Output rises, costs drop when coil stock is fed to the press, the shear, or the slitter through a Littell Straightening Machine. Coil stock comes out of a Littell Straightener flat, with curvature removed. Equipped with variable speed transmissions, Littell Straighteners are easily adjusted to meet a wide range of speed requirements. Thirteen medium and heavy duty models straighten coil stock of all standard widths and thickness.

F. J. LITTELL MACHINE CO.

WRITE FOR CATALOG

ROLL FEEDS • DIAL FEEDS • STRAIGHTENING MACHINES • REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

4139 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 5022

RAMSCO

FREE TURNING

BALL BEARING SWIVEL FITTINGS

FOR LIQUIDS, GASES, STEAM, AND OTHER CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION SERVICE.

360° FREE ROTATION—1, 2 AND 3 PLANES

Your particular piping problems solved. You name it—we have it. Over 500 sizes, types, styles. Sizes: ¾" to 14" low pressure; ¾" to 6" high pressure. Corrosive service or steam fittings 1000 psi. and temp. to 750°F., asbestos or Teflon packed. Low pressure fitting to 1000 psi. and temp. to 225° F. High pressure fittings to 15,000 psi. and temp. to 225° F. Gear driven types available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at left, threaded, flanged or weld ends.

RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

RAMSCO

If you write maker identify as IEN-5023

Johnson Flexible Seamless Metal HOSE

For
conveying under pressure or vacuum
Steam-Oil-Water-Gas-Refrigerants

Ask for Bulletin J-3

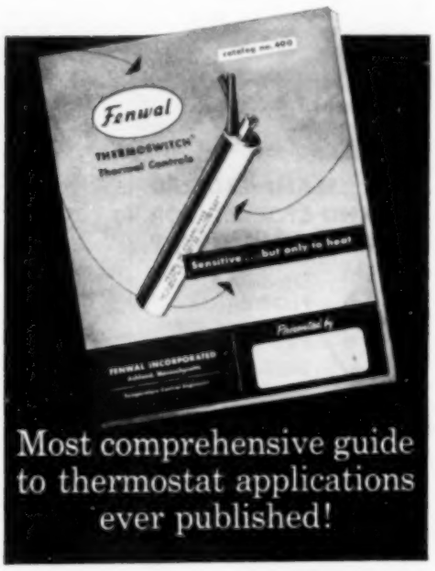
Deep convolutions provide for extreme flexibility.

Made of brass, bronze, carbon steel, stainless steel alloys.

Standard or special fittings available for hot or cold service.

JOHNSON METAL HOSE INC.
P. O. Box 952 Waterbury 20, Conn.

If you write maker identify as IEN-5024



Most comprehensive guide to thermostat applications ever published!

Get your copy of unusual 52-page catalog today!

Find out *now* how you can get closer temperature control at lower cost. Illustrated, 52-page catalog shows you:

WHY Fenwal THERMOSWITCH® thermostats respond at the preset temperature you want (between −100°F and +1500°F) within the desired operating differential (can approach 0.1°F in a well-designed system).

HOW to choose the right THERMOSWITCH unit from the ten standard types for controlling temperatures of solids, liquids or gases.

WHERE to apply THERMOSWITCH controls in relation to heating elements in ovens, incubators, stills, dryers and other equipment.

WHEN special modifications may be added to standard THERMOSWITCH units to fit specific conditions.

HOW MUCH standard THERMOSWITCH thermostats and special modifications cost. You'll be surprised at the low list prices.

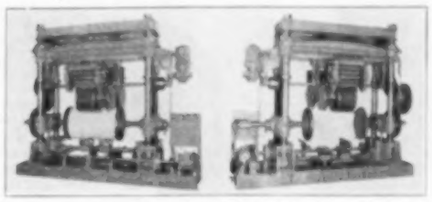
SEND FOR YOUR FREE COPY of this Fenwal catalog (No. 400) today. Fenwal, Incorporated, 75 Pleasant St., Ashland, Mass.

Fenwal
THERMOSWITCH®
Electric Temperature Control and Detection Devices
SENSITIVE . . . *but only to heat*

If you write maker identify as IEN-5026

PRINTING . . Double head machine makes two-color impressions on drums

Source: SOMMERFELD MACHINE CO.
1943 Robinson St., Braddock, Pa.



Reservoirs hold the ink

Two heads carrying specified type are mounted in a support member in this new two-color rotary drum printer. The support member is carried by four vertical columns in vertically adjustable assembly for drums from 14 to 22½ in. in diameter. The heads can be positioned horizontally to print in the center or on either side of the rolling ribs on drums measuring 14 to 42 in. in length. One operator can make a set up for a drum of given size in about an hour.

The drum to be printed is positioned on a roller cradle that is supported by cams mounted on a motor-driven shaft. This shaft is operated at one cycle in ten seconds. It lifts the drum to printing position, holds it there and then retracts for unloading. The printing heads are also motor driven at 12½ rpm. in connection with a single-revolution clutch. The work is held by an adjustable mechanical chuck and by a pneumatic chuck at its two ends. Overall machine dimensions are 10½ by 4½ by 9 ft. including controls.

If you write maker identify as IEN-5027

CONSTRUCTION . . Diesel hammer to drive piles, has 33-in. power stroke

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

Has remote control

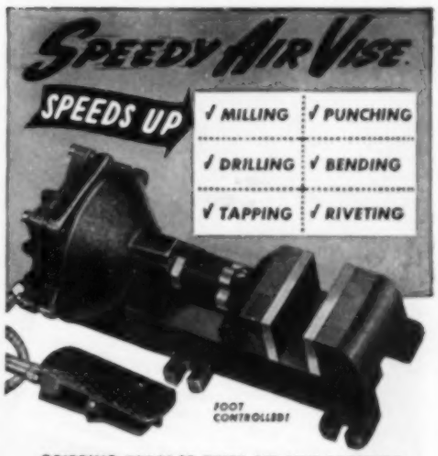
Operation is at 110 blows per min. for this new DPH-3000 diesel pile hammer. Its 1,200-lb. ram delivers a blow rating 3,000 foot pounds. Overall dimensions are 18 by 108 inches. The assembly fits in 18½-in. leads and weighs 3,000 pounds. The unit is a smaller size in the line previously described IEN-4330-51.

The ram is lifted to the top of its stroke to start the hammer and is released to drop by gravity. Prior to reaching the bottom it engages a cam-operated fuel pump to inject a pre-determined amount of fuel into the combustion space remaining between the ram and the anvil. Continued downward movement compresses the air to ignition heat. The resulting impact, when combustion takes place, drives the pile downward and the ram back upward.

Ports in the cylinder are opened as the ram moves upward to exhaust the burned gases to atmosphere. Air in the space at the top of the cylinder is compressed on continuing rise to stop the upward stroke and provide compression that starts the ram down again to repeat the cycle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5028



GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . . . only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR TOOLS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN-5029

Handles More Jobs

1" collet and 1¾" spindle bore give this lathe the capacity for a greater variety of jobs. Its 48 power feeds for turning, 48 for facing and 48 for threading give you everything you need for any job. And its accuracy and rugged construction assure precision work through years of dependable service. *Write for catalog.*

South Bend 10" x 3', 1" Collet Capacity, Quick Change Gear Precision Bench Lathe (illustrated above).

Building Better Tools Since 1906
SOUTH BEND LATHE SOUTH BEND 22, INDIANA

If you write maker identify as IEN-5030

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.

Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the precise spot where equipment was designed to be best supported.

Available in three sizes: 1¾", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.

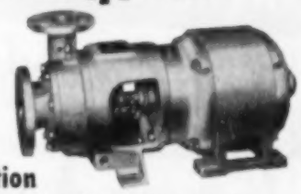
Write for specifications and prices of the complete line of Empco Leveling Jacks today.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
3737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN-5031

MOTOR PUMP



Stop Production Delays with Efficient Pumping

The compact design of Ingersoll-Rand MOTOR-PUMPS makes them unusually strong and rigid. They stand up under the most severe service, require less maintenance because oversize shaft eliminates many packing troubles. MOTORPUMPS have many other features that assure long trouble-free service, less down time—and more efficient pumping for your money. And if you want pumps fast, we have 26 conveniently located branch offices and warehouses to give you prompt service.

A complete range of sizes and types: Standard and heavy duty MOTORPUMPS; cradle-mounted pumps; coolant pumps; and turbine-driven pumps. ¼ to 40 h.p. up to 1800 g.p.m. against heads up to 600 ft. also a full line of larger units.

Ingersoll-Rand
310-9 11 Broadway, New York 4, N. Y.

If you write maker identify as IEN - 5032

SOMETHING NEW IN PRODUCTION ECONOMY

CHALLENGE PRESENTS THE LOW-COST UTILITY BENCH

Simplicity of design keynotes this new Utility Bench by Challenge. No "frills" or fancy accessories to add to the price . . . just a heavily-ribbed 24" x 36" cast-iron top supported by four sturdily braced, steel legs. Lightweight, yet rugged in construction. Ideal for many uses in any shop. 36" high . . . or (30" high as a nailing table.) Write today for details.

A Challenge Work Bench for Every Requirement In 4 sizes: 28" wide by 4, 5, 6, or 7 ft. long. Each with cast-iron top . . . steel tool box shelf . . . drawer with lock . . . convenient storage shelf, plus other extras to speed production. 705

THE CHALLENGE MACHINERY CO.

Office, Factories, Show Room — Challenge — *Grand Haven, Michigan*

TRADE MARK

If you write maker identify as IEN - 5033

PRECISION CIRCULAR CUTTERS

MEYCO carbide tipped and solid carbide cutters have earned an enviable reputation in plants where long tool life and precision workmanship is a MUST.

These cutters can be furnished in various diameters and thicknesses to meet the requirements of individual applications.

Saws and cutters, both carbide tipped and solid carbide, will aid production and precision in your slotting, venting, slitting and grooving operations . . . and they will be manufactured to your specifications. Please furnish complete specs and quantities desired when requesting prices and indicate material to be cut. MEYCO experience in the manufacture of precision tools, since 1888, is at your disposal.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

If you write maker identify as IEN - 5034

INCREASES TAP LIFE

by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine-tool gray. Write for circular.

$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
2724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

If you write maker identify as IEN - 5035

PAINTING . . Electric heater conditions lacquer or enamel to spray

Source: SPEE-FLO CO.
3601-5 Harrisburg Blvd., Dept. IEN, Houston 3, Texas

$57.50 with thermometer

Spee-Flo No. 202 is a new assembly of electric heater plate with timer and thermostat control and a handle and spout-equipped pouring collar. The plate is made to take a 1-gal. paint can on which the collar is placed and then locked after the can lid has been removed. The lid is put in place on top of the collar and a thermometer can be inserted through a hole in its center if actual lacquer or enamel temperature is to be checked.

The heater operates on 110-volt ac. Its centrally-located spot-type element is a twin unit rating 330 watts for each of the two elements. Control centers at the combination thermostat timer which can be set for the amount of fluid to be heated and also for ambient temperature. The timer shuts off at the end of the selected interval and the heated liquid is held at the set temperature ready to be poured into a spray-gun fluid container.

If you write maker identify as IEN - 5036

SCAFFOLD . . Telescoping tower positions worker 30 ft. above ground

Source: ATLAS INDUSTRIAL CORP.
847 39th St., Brooklyn 22, N. Y.

Power drive in base

Hi-Lift is a new electrically-operated telescoping tower that can be positioned at any height between 6 ft. and 30 ft. above the ground. Movement through the overall range can be made in about 5 min. or a little less. The assembly is mounted on roller-bearing swivel casters for movement from one location to another. It can be operated by one man on the ground or on the working platform. Outriggers are mounted in swivel arrangement on the base to steady the structure and hold in a set position. The platform is equipped with a guard rail for the operation. The platform is insulated so the worker is not in danger of grounding an overhead electric circuit.

If you write maker identify as IEN - 5037

SAWING . . How to do band sawing and other band operations described in textbook

DoAll Co.
252-56 N. Laurel Ave., Des Plaines, Ill.

"Band Tool Manual" is a 160-page bound book, list price $2, on tools and machines for band sawing, slicing, grinding, filing, polishing. It covers performance, setup, terminology. About half the book consists of selection charts for materials ranging from aluminum and asbestos to rubber and wood.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5038

If you write maker identify as IEN - 5039

SOLVE CORROSION PROBLEMS with TAPECOAT*

The Original Coal Tar Tape Protection for Pipe, Pipe Joints, Couplings, Tanks, etc.

Here's time-tested, coal tar protection against moisture, acids, alkalis, chemical fumes and other severe conditions—both underground and above ground. TAPECOAT gives greater protection, reduces maintenance and cuts pipe replacement cost. It's easily applied because it's sized to the job. Comes in widths of 2", 3", 4", 6", 18" and 24". It's quickly applied by use of a torch to bleed the coating for perfect bond. Wrapped spirally or "cigarette-wrapped."

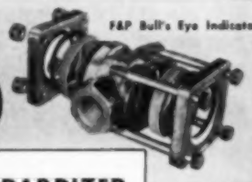
Write for details and prices.

*Reg. U. S. Pat. Off.

The TAPECOAT Company
1553 Lyons Street, Evanston, Illinois
Originators of Coal Tar Tape Protection

If you write maker identify as IEN - 5040

NOW


F&P Bull's Eye Indicators

STANDARDIZED AND STOCKED FOR PROMPT DELIVERY

Selection of FLOWRATOR Meters and other F&P flow-rate instruments simplified

Standardization of F&P indicating instruments permits quantity manufacture, lower costs, and quicker deliveries.

You can now select flow meters from catalog data to meet your immediate requirements. Engineering charges and manufacturing delays are eliminated.

WRITE FOR NEW "STOCK FLOW METER" BULLETIN

Contains complete data, sizes, and prices with illustrations of F&P instruments now stocked. It lists all F&P sales engineering offices showing which offices carry stock meters.

PROCESS CONTROL INSTRUMENTS — FLOWRATOR

FISCHER & PORTER CO.
DEPT. 2Q-4D
HATBORO, PENNSYLVANIA, U. S. A.

RATOSIGHT Flow Indicators

"C-CLAMP" FLOWRATOR Meters

ORI-FLOWRATOR high-capacity by-pass meters

MAGNASIGHT Flow Indicators

Laboratory Flow Test Kits

FLOWRATOR accurate flow measurement meters

If you write maker identify as IEN - 5042

Norgren **MICRO-FOG LUBRICATORS**

RELY ON

ACE
PRECISION
NYLON BALLS
FOR EXACT CONTROL

SIZES 1/8"–3/8"
TOLERANCES ±.001

C. A. Norgren Co., Denver, Colorado, uses Ace Nylon Balls as feed tube checks in Micro-Fog Lubricators to provide instant oil flow.

Ace Nylon Balls of Du Pont Nylon FM #10001 are mass produced to close tolerances giving you the advantages of toughness at low temperatures, form stability at high temperatures, light weight, chemical and abrasion resistance.

Request samples and bulletin TODAY!

Hundreds of Industrial Applications! Let our engineers advise you.

ACE PLASTIC COMPANY
Precision Plastic Fabricators

91-24 Van Wyck Blvd. • Jamaica 2, N.Y.

If you write maker identify as IEN - 5043

Hardness Readings in 2 seconds!

Webster
PORTABLE
Hardness Testers
FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity 1/4". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

WEBSTER INSTRUMENT Inc. DEPT. N, 11856 Mississippi Ave. LOS ANGELES 25, CALIFORNIA

If you write maker identify as IEN - 5044

EXPECT EVERYTHING IN

SERVICE

from

Safe -- Non Skid

YOU'LL GET

- Study of Your Specific Floor Problem
- Cost-cutting FLINTZ Recommendations
- "On-the-Spot" Installation Instructions
- Periodic "Check-up" Service Calls

A FEW TERRITORIES OPEN FOR MANUFACTURERS REPRESENTATIVES.

"SERVICE" has an important double meaning with FLINTZ. *First*—it's the close personal attention you get from the Dura-Tred Engineers . . . both before and AFTER your floor is modernized with *non-skid*, low-traction FLINTZ. *Second*—it's the all-out efficiency this hard, durable, thin-section resurfacer assures you FOR YEARS TO COME. Ready-mixed, easy-to-use. Spread FLINTZ like wet sand and let the trucks roll. No delay.

Write for descriptive literature.

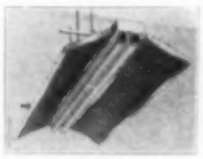
dura-tred Co.

352 N. CENTRAL PK. BLVD., CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 5045

HEATING . . Radiant glass panels assemble on sides of lighting fixture

Source: SALTON MFG. CO.
29-A Jumel Place, New York 32, N. Y.



Code approved

Directoray trade names a new combination heating and lighting fixture in which two radiant-glass heating panels with aluminum grids in aluminum frames apply on the sides of a 48-in. fluorescent fixture. The combination source of heat and light is particularly suited for use in large areas where the heat can be transmitted by radiation to the workers to keep them warm.

Surface temperature at the panels is about 250 deg. F. with 50-deg. ambient temperature. Heat output is about 3,000 btu. radiated downward. Input rating is 1,500 watts for one suspension unit to include two radiant panels as shown. Operation can be specified on 110 or 220-volt ac. or dc.

If you write maker identify as IEN - 5046

DUST COLLECTING . . Filter panel particularly to trap paint overspray

Source: RESEARCH PRODUCTS CORP.
1013-17 E. Washington Ave., Madison 10, Wis.

Bulletin 1217 presents details

Rectangular frame, two wire grids for the frame faces and two porous pads to place between the grids make up a new Paint Arrestor panel for installation in multiple in a paint spray-booth exhaust outlet. Panel sizes range from 16 by 20 to 20 by 25 inches. Two thicknesses are 2 and 4 inches. The pads trap overspray from the booth until they approach the point of clogging. They are then removed and replaced by fresh pads. List prices range from about $3.50 to $6 for the frames, $1 or a little more for pairs of the grids and 35 to 90 cents for the pads depending on size.

If you write maker identify as IEN - 5047

CASTER . . Rigid and swivel units, 10 or 11 in. wheels, 1 ton at 8 mph.

Source: LANSING CO.
600 N. Cedar St., Lansing 12, Mich.

Little girl, big casters

Cast-iron wheels in web-reinforced design are mounted on taper roller bearings in this new heavy-duty caster. The bearings are equipped with labyrinth grease seals. The caster is available with a 10-in. wheel in both swivel and rigid design and with an 11-in. wheel in the rigid design only. Rubber tires can be specified. Intended application is primarily on heavy-duty trailers for operation with a tractor, either singly or in a train.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 5048

Because they wear longer...stand up better to the destructive effects of heat, abrasion, corrosion and chemical action, Wissco Metal Processing Belts have become the accepted standard for varied applications involving processing and heat treating.

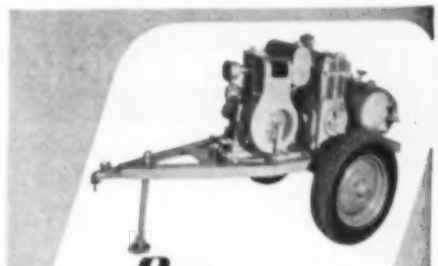
They're your assurance of uninterrupted trouble-free production at a time when stoppages cannot be tolerated.

For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 5049



Quincy COMPRESSORS

GO WHERE THEY'RE NEEDED

Portable Quincy Compressors, ranging in size from 1 to 45 c.f.m. supply compressed air "on the spot" quickly and efficiently. Select from the Quincy line of portables . . . four types of mountings, gasoline engine or electric motor drive. Write today for details and latest prices. Quincy Compressor Co., Dept. H-24, Quincy, Illinois.

QUINCY COMPRESSOR CO., Quincy, Illinois
Branch Offices: New York • Philadelphia • Chicago
St. Louis • Dallas • San Francisco

If you write maker identify as IEN - 5050

BOSS THE BEST KNOWN NAME IN **WORK GLOVES**

There's a perfect Boss Glove for every job

WHITE CANTON FLANNEL GLOVES
DOUBLE PALM GLOVES
HOT MILL GLOVES & MITTENS
LEATHER PALM GLOVES
JERSEY GLOVES & MITTENS
ALL-LEATHER GLOVES

OLD FISTFUL No. 1270
A BOSS headliner. Complete range of styles shown in catalog.

ASK YOUR DISTRIBUTOR or send for free copy of complete catalog and new "WORK GLOVE SELECTOR." The quick and easy way to find exactly the right glove for every job. Also see "Thomas Register," 1952 Edition.

THE BOSS MANUFACTURING CO., DEPT. IE-5, KEWANEE, ILL.

If you write maker identify as IEN - 5051

TOLEDO
Mailing and PARCEL POST SCALES

Model 419—5 lb. capacity. Air mail, first class, parcel post, etc.

Control Postage Costs!

Save time . . . stop excess postage costs . . . avoid ill-will of "postage due" . . . with the speed and dependable accuracy of Toledo Scales! Choice of 11 models for mailing and parcel post . . . each with automatic Toledo indication of correct postage. Write for bulletin 3047-B. Toledo Scale Company, Toledo 1, Ohio.

Model 3659—Full capacity parcel post and express scale. Computes for all zones.

TOLEDO
HEADQUARTERS FOR SCALES

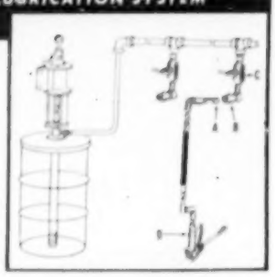
If you write maker identify as IEN - 5052

JUST LIKE A WATER TAP!

ALEMITE TOTE-A-HOSE

POWER LUBRICATION SYSTEM

Brings Waste-Free Mess-Free Lubrication to Multiple Stations Throughout the Plant!



Production line assembly will run smoother . . . machine maintenance will be faster if high pressure lubrication is available at any point on any floor throughout your plant. And now, just as water is piped . . . this new Alemite Tote-A-Hose System carries lubricants barrel-to-bearing right to the job. Lubricant under pressure from the supply pump is always available at all stations. Lubrication man "totes" a compact hose and control, merely snaps the fitting "A" into the coupler "B," opens the valve "C" and he is ready for efficient, powerful lubrication of bearings from control valve "D".

Get The Facts! Write now for complete free information. Address Alemite, Dept. K 52, 1850 Diversey Parkway, Chicago 14, Illinois

ALEMITE SW

Industrial Lubrication Equipment

If you write maker identify as IEN - 5053

You CAN'T Go Wrong with

Abart

SPEED REDUCERS

No two ways about it—Abart Speed Reducers have the stamina to stand up under years of grueling service . . . whatever the job you may be sure of a dependable, trouble-free performance. Choose from over 75 sizes and types in spur, worm and combinations . . . 1/50 to 168 HP . . . ratios up to 10,000 to 1. Abart Reducers are oil-tight, dust-free, long wearing—made of the strongest materials.

Send now for illustrated catalog showing the complete line of Abart Speed Reducers.

Abart GEAR & MACHINE CO.

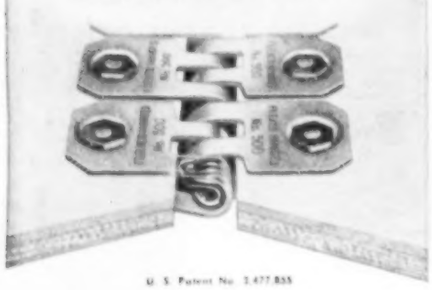
4923 WEST 16th STREET • CHICAGO 50, ILLINOIS

Mfrs. of Gears and Speed Reducers

If you write maker identify as IEN - 5054

. . . the new separable

FLEXCO HINGED BELT FASTENERS



U. S. Patent No. 2,477,855

- For joining underground extension conveyors.
- A FLEXCO fastener that is HINGED. Has removable hinge pin.
- Troughs naturally, operates smoothly through take-up pulleys.
- Strong, durable . . . pull or tension is distributed uniformly across joint.
- For conveyor belts ⅜" to ½" thick.

Order From Your Supply House. Ask for Bulletin NF 500.

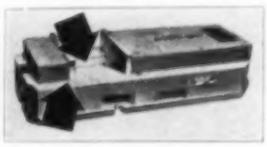
FLEXIBLE STEEL LACING CO

4610 Lexington St., Chicago 44, Ill.

If you write maker identify as IEN - 5055

VISE . . Pneumatic design to secure work on a machine table

Source: PRODUCTION DEVICES INC.
1000 N. William St., Whitehall, N. Y.



Also for hydraulic operation

New design of the company's Model S-7 Airlox vise now includes a slide plate that rides in the center slot in the vise bed to exclude chips and felt wipers that are recessed into the movable jaw casting to keep the bed clean. A similar felt is secured in the fixed jaw casting to wipe the new chip plate as it moves under this jaw. The vise has been strengthened at vital points also so now it weighs 130 lb. as compared to the previous 108 pounds.

Overall dimensions are about 23 by 8½ by 5¼ inches. The jaw faces measure 7 by 1⅜ inches. Maximum opening is 5⅝ inches. Ratio of gripping force to air pressure is 90 to 1. The movable-jaw stroke is adjustable to a maximum of ½ inch. Cross keyways in the faces of the jaw castings and a dowel pin in the keyway center provide for positive alignment of the false-jaw faces of the improved vise.

If you write maker identify as IEN - 5056

DRYING . . Infrared equipment for work mounted on roller trays

Source: WIL-SON MFG. CO.
702 Houston St., Cloverport, Ky.

Trays rate 50 pounds

New assembly of the company's unit type infrared oven sections, previously described IEN-962-52, forms an arch over a metal trough. Work is mounted on roller equipped trays for movement through the oven to bake synthetic enamel and lacquers or for drying after electroplating.

Section lengths which determine the oven length are 24, 32, 48 and 96 inches. Each section employs asbestos-insulated construction with heat-conserving baffles. Lamp sockets are wired with asbestos insulated leads. Each channel is equipped with a toggle switch for individual lamp control.

If you write maker identify as IEN - 5057

METALS . . Lead clad steel and copper described as to properties and uses in booklet

Knapp Mills Inc.
23-17 Borden Ave., Long Island City 1, N. Y.

Metallic lead as a material for chemical equipment, advantages and disadvantages, development of lead-clad steel and lead-clad copper, properties of these materials, comparisons with sheet lead, applications of clad materials in process work and plating are described in new 24 page booklet. Title is "Ferrolum and Cupralum — History and Development".

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5058

6 OUTSTANDING FEATURES of the ROBINSON Metering Pump

- Forcibly ejects fluid compounds . . . not a gravity dispenser.
- Thermostatically controlled heat . . . maximum temperature 450° F.
- ⅔ Second per ejection . . . motor driven, clutch actuated.
- Variable discharge . . . speed of ejection changed in 2 seconds without tools.
- Reduces unit costs . . . saves material, reduces rejects . . . no skilled operator required.
- Adaptable to any production technique . . . easily installed.

The Robinson Metering Pump has a wide variety of applications and, therefore, may be instrumental in solving some of your problems. Write us for further information.

EDWARD E. ROBINSON

CORPORATION

P.O. Box 147

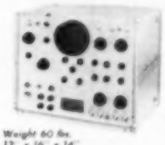
55 PARK AVENUE — NUTLEY 10, N. J.

Telephone NUtley 2-4510

If you write maker identify as IEN - 5059

THE LAB PULSESCOPE BY WATERMAN

MODEL S-5-A



Weight 60 lbs.
12" x 16" x 14"

Video amplifier up to 11 mc . . . Video Delay 0.55 μs . . . Pulse rise and fall time better than 0.1 μs . . . Video sensitivity 0.1 volts p-p . . . Sweep: 1 μs to 125,000 μs with 10 to 1 sweep expansion . . . Sweep triggered or recurrent . . . Internal markers synchronized with sweep from 0.1 μs to 500 μs . . . Trigger generator with output available externally . . . Built in precision amplitude calibrator . . . Combination case . . . Operates on 50 to 1000 cycles at 115V AC.

Another Waterman first, a compact, portable wide band pass laboratory oscilloscope with markers that are triggered in synchronism with the incoming signal. Ideal for pulse measurements, such as shape, amplitude, duration and time displacement. S-5-A LAB PULSESCOPE is adaptable to all kinds of electronic work where knowledge of circuit performance is essential. Built in Video delay permits observation of leading edge of triggering pulse. Precision means of amplitude calibration are provided. Sweep can be either repetitive or trigger with 10 to 1 expansion when desired. Internally generated markers, together with Video calibration, provide quantitative data of amplitude, shape, duration and time displacement of pulses. The oscilloscope thus is truly a PULSESCOPE, another Waterman first.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 23, PA.

CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:		
S-4-A	SAB	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-A	HIGH GAIN	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as IEN - 5060

JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1 MORE CAPACITY—for its weight, size and price.
2 SELF-PRIMING—starts instantly with high suction lift.
3 ONE MOVING PART—tough, long-lived.
4 GEARLESS—impeller outlasts metal gears.
5 TROUBLE FREE—simple construction.
6 ECONOMICAL—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY

2031 N. Lincoln Street • Burbank, California

If you write maker identify as IEN - 5061

You can salvage Valuable Parts—

—FOR LESS THAN 25¢!

Including Labor, Materials, Burden

Elox Electron Drills* are production machines designed for fast removal of broken taps, drills, studs, etc., without harm to thread or wall, sticking or welding. Most units are completely self-contained, easily transported and come ready to plug in. As simple to operate as any drill press, Elox Electron Drills* are an insurance against loss of time, money and materials. Throughout the world, Elox machines salvage millions of dollars of work each year. Check your scrap today. There's an Elox Electron Drill* priced for any industrial requirement. Write today.

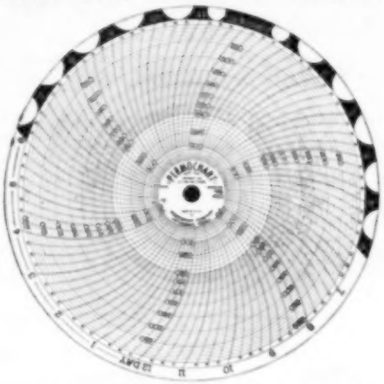
ELOX CORPORATION OF MICHIGAN

730 N. Rochester Road

Clawson, Mich.

If you write maker identify as IEN - 5062

LONG-LIFE PLASTIC CHARTS



Reusable — PERMOCHART* — Washable

You can use WASHABLE, laminated plastic "PERMOCHARTS"* on all your circular recording and controlling instruments. Convenient to use, they'll save you time and expense.

• Guaranteed serviceable lift—TWO YEARS. • Cost per day only $ .00205 to $ .00342 • Available for any instrument using circular charts. • Made of 100% "Vinylite" plastic laminated construction.

Send for sample of PERMOCHART Construction

* Reg.

ALLEGHENY PLASTICS, INC.
390 CHESTNUT ROAD SEWICKLEY, PA.

If you write maker identify as IEN - 5063

Volume-manufactured in two styles—the socket type and the Crowfoot type, TAC Open End Ratchet Wrenches are scoring phenomenal time and labor savings throughout all Industry.

It is a matter of record that heretofore no tool was made that could —*in a limit of 7° ratcheting arc*— successfully tighten or back off nuts or fittings on tubing or other standing center assemblies. The speed with which TAC can complete difficult wrenching jobs, in anybody's hands, is amazing.

Our plants are currently producing at capacity for all the Armed Forces and for Defense industries.

For Phenomenal Speed in These Wrenching Jobs

ELECTRICAL CONDUIT-HYDRAULIC LINES
LUBRICATION LINES
ENGINE FUEL LINES
PNEUMATIC LINES
REFRIGERATION
AIRCRAFT
RAILROAD EQUIPMENT
RIGGING EQUIPMENT
REFINERY EQUIPMENT
CHEMICAL LINES
AUTOMOTIVE EQUIPMENT
WATER AND GAS LINES
. . . AND DOZENS OF OTHERS

© 1952—TAC

TAC
TUBING APPLIANCE COMPANY
10321 ANZA AVENUE
Los Angeles, California

If you write maker identify as IEN - 5065

DRIVE . . Magnetic brake for Type C motors on machines, cranes

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Alhambra, Calif.

Releases manually for hand rotation

Brake application is by springs and release is by a ring-type solenoid in this new motor brake. Its design provides for application on a motor frame or end bell with the motor shaft extending through the brake assembly for connection to a drive. Three continuous-duty ratings are 3, 10 and 25 foot pounds. Two intermittent-duty types have ratings of 15 and 35 foot pounds.

The mechanism is assembled inside a cast housing that is secured in place by four screws. Housing diameter is about 8¼ inches. Housing length, in line with the motor shaft, is 3 in. and 4 in. depending on the rating. The brake can be employed on standard motors and on assemblies with fluid couplings, also available from the company.

The ring-shaped solenoid is mounted on a base plate as shown to the left in the illustration. This plate is machined and threaded to position and secure the housing shown at the right-hand side. A spring-backing ring, next to the solenoid, is entered into the housing and turned through an arc to ride in slots in housing lugs and form a base for the four springs. They apply the brake when the motor circuit is opened. The rings span the armature assembly which is guided by the studs on which the springs also ride.

The two rotating parts of the brake are the gear shown in the center of the illustration to secure to the motor shaft and the internal-toothed brake disc which rotates with the gear between the housing and the armature unit. When the motor circuit is closed the armature is attracted toward the solenoid to compress the springs and release the disc so it floats freely on its driving gear.

If you write maker identify as IEN - 5066

CUTTING . . Gasoline-oxygen torch for general metal cutting application

Source: BROWNING TORCH CORP.
Route No. 2, Canonsburg, Pa.

Gasoline replaces acetylene as the fuel for this new torch. Tests indicate that it will burn 70 cents worth of gasoline to do work equivalent to an oxy-acetylene torch burning 100 cu. ft. of acetylene. Standard equipment includes the torch, a gasoline tank, two 15-ft. lengths of hose and three cutting tips. List price is $130.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5067

Fewer Parts make easy assembly

Simple construction, fewer parts make assembly and disassembly easy — also mean longer life.

CURTIS UNIVERSAL JOINTS

Simple construction is not the whole story. A combination of modern design, wise choice of alloy steels, with a special heat treatment for each part, give greater strength with less weight. And you can depend on Curtis catalog ratings — they are based on hundreds of actual tests.

ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability — 14 sizes always in stock.
Simplicity — fewer parts, simpler construction.
Government Tests — complete equipment for government tests in our plant.

Write today for free engineering data and price list

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Ave. Springfield, Mass.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 5068

If you write maker identify as IEN - 5069

FASTEST WAY TO MAKE SMALL PARTS *and it costs less*

USE Starrett PRECISION GROUND DIE AND FLAT STOCK

Starrett Precision Ground Flat Stock is ideal for test tools; die, jig, fixture and machine parts; templates; shims; gages; punch dies, etc. Made from high grade annealed tool steel cut lengthwise from the sheet and ground to within .001" in thickness. 18-inch lengths, widths from ½ to 6 inches, thicknesses from 1/64" to 1" and more. Each piece individually wrapped and marked with size, type and heat treating instructions. Write for New Ground Flat Stock Folder and New Chart "N" giving Formulas for both Oil and Water Hardening.

Starrett SINCE 1880 WORLD'S GREATEST TOOLMAKERS
THE L.S. STARRETT COMPANY ATHOL, MASS. U.S.A.
BUY THROUGH YOUR DISTRIBUTOR

If you write maker identify as IEN - 5070

Now! AN AIR PRESS BUILT FOR PRODUCTION USE

Here's another Famco Cost-Cutting Machine—a compact, rugged Air Press built for high-speed production operation. Famco Air Presses are available in 20 models, ½ to 3½ Ton capacity with electric or air controls—the product of Famco and Bendix-Westinghouse engineering. Features include:

- Semi-steel cast frame and cylinder mount; use of alloy-steel, copper tubing and steel fittings throughout.
- Frictionless (leak-proof), longer-lived cylinder requires no lubrication.
- Infinitely variable vertical adjustment of cylinder.
- Extra-long strokes infinitely variable from 0 to maximum.
- Accurate built-in pressure gauge.
- Ram keyed to prevent rotating.

For further details, write for new Famco Air Press Catalog.

FAMCO MACHINE CO., 1303 18th St., Racine, Wis.

famco (COST CUTTING) **machines**

ARBOR PRESSES • DRILL PRESSES • BAND SAWS • AIR PRESSES
POWER PRESSES • FOOT PRESSES • SQUARING SHEARS

If you write maker identify as IEN - 5071

New "PLUG-IN" MULTI-BREAKER NMO PANELETTE

"OFF-THE-SHELF" low cost NMO PANELETTES meet most A. C. lighting and appliance branch circuit applications. THERMAL-MAGNETIC circuit breakers provide both SWITCHING and OVERCURRENT PROTECTION. Available with lugs or circuit breaker mains and up to 40 branch circuits. Standardized components stocked by authorized Square D Distributors everywhere.

Write for Bulletin 1600, Square D Company, 6060 Rivard Street, Detroit 11, Michigan

SQUARE D COMPANY

DETROIT · MILWAUKEE · LOS ANGELES

If you write maker identify as IEN - 5072

HANSEN

Hardened steel nozzles for long wear. Removes rust, paint, carbon. Prepares metal for soldering and welding. Holds 3 pounds silica sand, works efficiently with 80 to 125 pounds compressed air. Air Blow Gun, which is a detachable part of sand blast cleaner, may be purchased separately, for blowing dust, dirt, etc. Has ¼" hose stem connection. Write for catalog.

Write for catalog showing complete line of one-way shut-off, two-way shut-off and straight-through quick connective couplings—also hose clamps, air spray cleaners, etc.

THE HANSEN MANUFACTURING COMPANY
4045 WEST 150th STREET · CLEVELAND 11, OHIO

If you write maker identify as IEN - 5073

Less TOOL HANDLING...
• MORE PRODUCTION
• MORE PROFIT
with Mall Flexible Shaft Machines

Here's speedy, light weight power for weld grinding and finishing work, wire brushing, disc sanding, polishing and many other useful applications. Save operator's time and energy with a MALL Flexible Shaft Machine. Rugedly built—equipped with heavier-duty, constant speed motor with the power reserve to handle overloads. Shaft and housing made from finest special steels—entire machine quality-built.

Grinding · Wire Brushing · Sanding · Polishing

Mail Coupon For Bulletin No. 430.

Mall

40 Factory-Owned Service Warehouses, Coast To Coast, To Serve Our Customers and Thousands of Dealers.

MALL TOOL COMPANY 7782 S. Chicago Ave. Chicago 19, Illinois

Send Bulletin 430, Mall Flexible Shaft Machines.

Name
Street & No.
City Zone State

If you write maker identify as IEN - 5074

PYROMETER . . Portable hand unit for surface and immersion application

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

Instrument alone $105

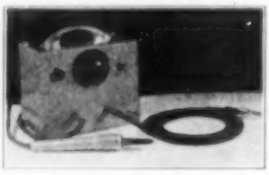
Overall range is 0 to 1,500 deg. F. for this new Type FH-1 electric hand pyrometer. A second range can be selected by operating a switch. It reads from 0 to 500 deg. F. over the 3½-in. scale. Accuracy is within 2½ per cent of full scale at the instrument cold-junction temperature of 80 deg. F. Automatic cold-junction compensation is provided for on both instrument scales.

Three tips are available for use interchangeably. They include one for surface measurements, one for immersion in liquid and molten metal and a two-prong tip for contact application. Difference in temperature between the hot and cold junctions causes a small voltage to be generated by the thermocouple. This voltage is read as a measure of temperature on the millivoltmeter enclosed in the housing. A carrying case can be supplied for the instrument, thermocouples and extension arms.

If you write maker identify as IEN - 5075

SOLDERING . . Carbon electrode unit heats on work contact to close circuit

Source: SUNRISE PRODUCTS CO. P. O. Box 173-A, Hawthorne, N. J.



List price about $37

Glo-Point Model K-72 is a new transformer type soldering assembly that employs a pencil tool with a carbon electrode. The circuit is completed through the electrode through the work and back to the transformer after applying the clamp-equipped lead shown to the right in the illustration. Heat can be adjusted by turning the knob on the housing face.

Applications include connection soldering on electronic tubes, parts, jewelry and small metal products. The transformer is enclosed in a housing measuring 6 by 4 by 5 inches. The pencil tool at the end of its extension is 7 in. in length and weighs 2 ounces. The assembly weighs 10 pounds. Operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN - 5076

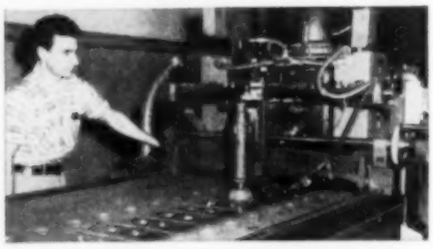
MAGNESIUM . . Impact-extruded parts are described by bulletin as to manufacture and uses

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

T. L. Patton of the company's Process Development Division is author of a technical paper available in 8-page reprint bulletin. Title is "Magnesium, Impact Extruded." Topics include slug preparation, lubricant application, preheating, die design, extrusion, stripping, uses for the parts produced.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5077



Robertson Grinding Wheel solves a big problem for Chase Aircraft

In constructing this machine to shape wing spar caps for the C-123 Transport, Chase Aircraft found a big problem on its hands. The bed of the machine—chilled cast iron 40 feet long by 27½ inches wide—had to be made perfectly flat. Experts said this couldn't be done by grinding.

But it was. A standard Robertson 1/3 x 1½ x ½ Type 11 wheel, driven by a 1 hp motor, did the job. Average stock removed was .015 inch. True flatness was achieved to an accuracy of .0025 inch.

It-couldn't-be-done jobs are everyday fare for Robertson Grinding Wheels. Blueprint your problem and let us recommend a wheel that will solve it.

ROBERTSON MANUFACTURING COMPANY
TRENTON 5, NEW JERSEY
Resin-Bonded and Vitrified-Bonded Grinding Wheels • Mounted Wheels • Segments

If you write maker identify as IEN - 5078

If You Have A FACTORY PROBLEM In Production, Assembly, Packaging, Shipping

You Can Save Time and Money By Using

SEAMLESS F.O.S. INDUSTRIAL TAPE

CALL OR WIRE

collect for complete information, prices, catalogues, free samples. Tape to meet government specifications. Wire details collect for 24-hour reply.

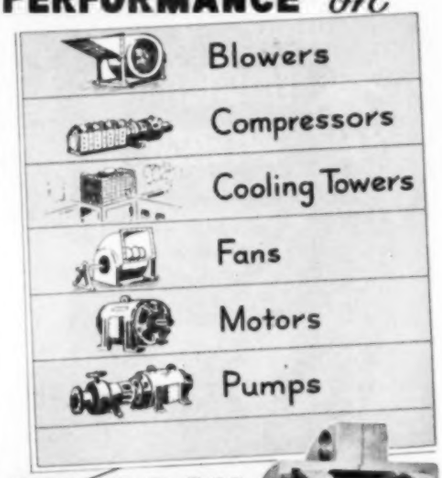
"Originators of Pressure-Sensitive Industrial Tape"

75th Anniversary

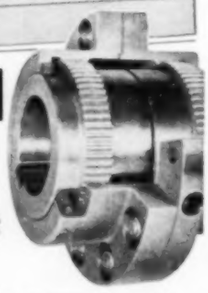
INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

If you write maker identify as IEN - 5079

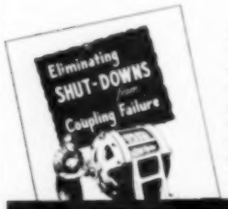
FOR PROVEN COUPLING PERFORMANCE on



WALDRON Improved Gear Type



From every standpoint—design, construction, operating features—these WALDRON Couplings give greater assurance of longer, trouble-free service. An examination of their many design refinements will quickly explain why they are so consistently specified for all types of applications where dependability of performance is a first essential.



Write for your copy of this new folder which explains in detail the coupling features which provide added insurance against coupling failure. Useful information for every coupling user. Copy will be sent promptly on request.

JOHN WALDRON CORP.
Main Office and Works
New Brunswick, New Jersey
COUPLINGS

Sales Representatives in Principal Cities.

If you write maker identify as IEN - 5081

Sutton MOTOR DRIVEN

PRESSURE BLOWER

ORDERED BY EVERY BIG NAME IN THE COUNTRY!

THREE SIZES
1/4, 1/2, 1 H.P.

USED FOR EXHAUSTING DUST, SMOKE, FUMES, VAPOR . . COOLING AND DRYING . . CONVEYING COTTON, WOOL, SHAVINGS . . FORGE BLASTING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY to reduce weight and increase strength. CENTRIFUGAL TYPE. Delivers even, compensating flow of air. Universal as to rotation and discharge. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from 1/2" to 6".

WRITE FOR LITERATURE AND PRICES

Sutton Manufacturing Corp.
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN - 5082

NEED D.C. POWER?

Get it from your A.C. line with a

SELENIUM RECTIFIER

- Easy to install anywhere
- Low in cost
- No maintenance
- Instant starting
- Add capacity at any time

If you will tell us your D.C. needs, we will gladly make suggestions from our wide variety of stock models.

WRITE TODAY FOR FULL INFORMATION

RAPID ELECTRIC CO.
2881 MIDDLETOWN ROAD, NEW YORK 61

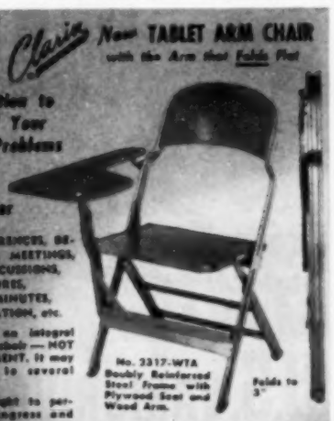
If you write maker identify as IEN - 5083

Now! Clarin Now TABLET ARM CHAIR with the Arm that Folds Flat

The Solution to Many of Your Seating Problems

The Ideal Seating For

SALES CONFERENCES, DEPARTMENTAL MEETINGS, GROUP DISCUSSIONS, LECTURES, TAKING MINUTES, NOTES, DICTATION, etc.



The arm is an integral part of the chair — NOT AN ATTACHMENT. It may be adjusted to several positions—

1) Raised upright to permit free ingress and egress.
2) Completely lowered to the side.
3) Folded flat against the seat for compact storage.

No. 2317-WTA Doubly Reinforced Steel frame with Plywood Seat and Wood Arm.

Folds to 3"

Available with Seat only, or Seat and Back upholstered.

Patented Rubber Feet prevent noise and marring.

Write today for folder, prices and delivery.

The Only Tablet Arm Chair of Its Kind ever devised.

CLARIN MFG. COMPANY
4640 W. Harrison St., Dept. 30
CHICAGO 44, ILL.

If you write maker identify as IEN - 5084

SAWING . . Circular blade machine, air operated hydraulic, for aluminum

Source: CONSOLIDATED MACHINERY & SUPPLY CO.
2029-33 Santa Fe Ave., Los Angeles 21, Calif.

Basic list price is $1,890

Aluminum shapes to 3 by 5 in. or solids to 2 by 4 in. can be cut to required lengths in this new Comet-MH machine. It takes a 12-in. blade in standard assembly and provides maximum vise capacity of 3½ by 6 inches. Drive is by a 7½-hp. motor with V-belt connection to the ball-bearing spindle. Equipment includes a motor-driven pump and coolant tank in the base. Required floor space is about 30 by 32 inches. Weight is 1,300 pounds.

The operator places work in the open vise and depresses a foot-operated valve at the front of the housing. This results in closing the vise to grip the work and in application of shop air pressure in a cylinder that moves the saw carriage forward to make the cut. The movement is controlled hydraulically with adjustment provided for any speed to 24 fpm. to suit given work.

Upon reaching the end of the cut the carriage retracts to its starting position and, as soon as the blade is clear of the work, the vise opens ready for the next cycle. Reverse takes place at any time while the cut is in progress if the operator takes his foot from the control valve.

If you write maker identify as IEN - 5085

PACKAGING . . Vinyl film, transparent, water proof, tough

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., New York 20, N. Y.

Original form is a tube

New vinyl film, based on Marvinol VR-10 resin, is extruded through a circular die at temperatures between 375 and 425 deg. F. to produce a new transparent film measuring 0.001 in. or less in thickness. The finished material can be supplied in widths to 100 in. as sheets or rolls.

The film has high strength, is durable and has excellent clarity and insulating properties. It can be produced in a range of bright colors at cost competitive with other types of plastic film. It can be made soft and flexible or stiff and paper-like as desired.

Applications include use in manufacture of low-cost disposable raincoats in which a complete coat with a hood can be folded into a unit about the size of a cigarette package. It can be used also as a dust-proof and moth-proof cover for clothes storage or to protect rugs and furniture during interior decorating. White shirts wrapped in the film will keep clean in a traveling bag. Dirty shoes can be wrapped to avoid soiling articles packed around them. The film can serve as a liner to convert a wooden box into a water-tight container.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

If you write maker identify as IEN - 5086

Kloppenborg (one piece) Cast Aluminum

EXHAUST and CIRCULATING FAN BLADES

INDUSTRIAL USE

Where air is to be moved—Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

EIGHT SIZES

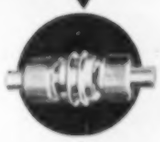
Kloppenborg Fan Blades are made in 8 sizes—from 12" to 30"—and are rated at 1750 RPM to delivery approximately from 1255 to 14,500 CFM. They are bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

If you write maker identify as IEN - 5087

"Steel Squirrel" Helps



One Man Do Work of Two

The self-propelled Blackwelder "Steel Squirrel" saves 50 percent of pruning, picking and wiring labor costs — and powers compressed air tools. ROCKFORD Pullmore CLUTCHES help it raise and lower the operator, turn on a dime and travel from tree to tree. Let ROCKFORD clutch engineers help give your machines versatile power transmission control.

ROCKFORD CLUTCH DIVISION
303 Catherine Street, Rockford, Illinois, U. S. A.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE
ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCHES

If you write maker identify as IEN - 5088

this new CATALOG

will help you solve your DUST AND FUME PROBLEMS

- Contains 40 pages of practical information and engineering data on dust and fume control.
- Explains how Dustube Collectors combine the proven efficiency of cloth filtration with a unique operating simplicity and economy.

WRITE TODAY FOR YOUR FREE COPY OF CATALOG 72-B

American dustube COLLECTORS
WHEELABRATOR & EQUIPMENT CORP.
307 S. Byrkit St., Mishawaka Ind.

If you write maker identify as IEN - 5089

"MOTORS RUN SMOOTHER when CRANKSHAFTS are DY-NAMICALLY BALANCED!"
—says Harold R. Etnyre, who has operated this "Bear" Dy Namic Balancing Machine for the past 5 years at Climax Engineering Co., Clinton, Iowa.

IT'S TIME TO INVESTIGATE if you are not using the PROVEN Dy-Namic Balancing technique in your plant! Improves product performance by reducing noise, vibration and friction —fast...accurate...economical! FREE Dy-Namic Balancing Manual brings you latest facts!
Bear Mfg. Co., Dept. I-8, Rock Island, Ill.

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES

If you write maker identify as IEN - 5090

Can you reduce costs with a smaller bearing having the same capacity?

Many have — with substantial savings in money and materials. Smaller housings and surrounding machine members are often possible because of the greater load capacity Guideroll bearings carry in a smaller radial bearing space. Over 98% greater than the next highest rated bearing that is dimensionally interchangeable. Not to be overlooked also is the fact that precision performance, without roller skewing, of a Guideroll bearing is in direct proportion to its comparable load carrying capacity.

SCIENTIFIC ROLLER GUIDING

A guide rail on the inside diameter of the outer race maintains roller alignment. Normally, no correction is required. Should misalignment cause tendency to skew, the guide rail touches grooved rollers back into position by momentary contact. See inset on illustration.

Rollers Roll More Load

Write today for the new Catalog No. 52. McGill Manufacturing Co., Inc., 100 N. Lafayette St., Valparaiso, Indiana.

McGILL precision bearings

If you write maker identify as IEN - 5091

ATTENTION!

Special airborne pressure switch for operation between sea level and 50,000 feet.

Unique multiple thermal assembly to safe guard heatings on a concept system to constant surveillance of low or temperature.

Originally designed thermostat for heat sealing plastic material used in automatic packaging machine.

Newly developed programming thermostat for precise cyclic control of heat treating oil bath.

Low cost, dependable, accurate thermostat for oxygen-feed internal temperature control.

YOUR PRODUCTS ARE BETTER WHEN SPECIFICALLY DESIGNED CONTROLS ARE USED

The controls shown were designed especially to improve product performance and thus increase product quality and sales appeal. They were developed by United Electric engineers in cooperation with the manufacturers concerned. United Electric is continually solving unusual control problems within the limits of 30" mercury vacuum to 3000 psi and -150° F to 700° F for inclusion as original equipment by manufacturers of a wide variety of products. Whether you are building 5, 5000 or more units, United would like to help you. Send complete details of your problem today.

UNITED ELECTRIC CONTROLS COMPANY
84 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 5092

now

ONE GOVERNOR MODEL . . .

for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

- Instant variable speed selection and accurate engine control at any speed setting within 1700 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.
- Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

Write for Complete Information

DEALERSHIPS AVAILABLE

List Price $44.00

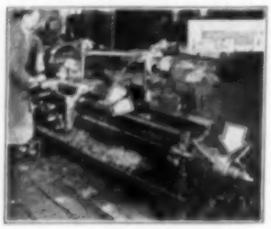
THE PIERCE GOVERNOR COMPANY, INC.
1640 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as IEN - 5093

CONTROL . . Tracer attachment for automatic contour machining

Source: TRACER CONTROL CO.
597 E. 10 Mile Road, Hazel Park, Mich.



The operator watches

Lathe application is shown in the illustration for the Lodge & Shipley electric duplicator control for which the company now has national distribution. The equipment consists of a tracer finger with suitable support, a control housing, a motor-driven hydraulic pump with tracer-actuated valves leading to hydraulic motors on the feed screws for the machine's longitudinal and transverse movements. An outline template is secured to the carriage to serve as the actuating member.

The company is prepared to supply the required engineering work for application of the control on any machine tool employing one or more variable movements to produce contoured work. Application can be made so the control does not interfere with normal operation of the machine.

If you write maker identify as IEN - 5094

PROTECTING . . Portable derail for tracks in railroad yards and mines

Source: NOLAN CO.
329 Pennsylvania St., Bowerston, Ohio

List price is $29.50

Recent improvement in design and availability of two sizes are announced by the company for its previously developed Model-T portable derail. It is effective in either direction on a right-hand or left-hand rail. It is secured in place by a wedge and is equipped with a metal flag.

Smallest of the two sizes measures 18 in. in length, weighs about 40 lb. and is adjustable for 20 to 60-lb. rails. The larger unit measures 22 in. in length, weighs 55 lb., is adjustable for 60 to 130-lb. rails.

If you write maker identify as IEN - 5095

METERS . . Selection and calibration data on variable-area flow meters in 44-page bulletin

Fischer & Porter Co.
5580 County Line Road, Hatboro, Pa.

Tube and float information occupies about half of new Bulletin 10G88. It includes physical form, nomenclature, dimensions, constants on "Flowrator" variable-area flow meters. Selection procedure, conversion formulas, capacity and calculations, calibration prediction data occupy the other half. There are four two-page characteristic curves on floats.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 5096

If you write maker identify as IEN - 5097

BE READY FOR WARM WEATHER

IMPROVE WORKING CONDITIONS *with a*

ROBINSON "SULKEY" TYPE COOLING FAN

Put a Robinson "sulkey" type cooling fan right on the job. Roll it into position on its truck type wheels, tilt it to direct the air right where you want it.

Built in sizes from 18" to 36".

Ask for Bulletin No. 8000

Place your cooling problems in our hands.

ROBINSON VENTILATING COMPANY

Manufacturers of Fans and Ventilating Machinery for over fifty years.

1948 Railroad Street
ZELIENOPLE, PENNSYLVANIA

If you write maker identify as IEN - 5098

NEW SEALER HOLDS THEM!

Prevents Leaks . . . Protects Surfaces

This newly-developed polyhydroxylated plastic sealer adheres to any surface. Does not become hard or brittle. Holds at joints under 2,000 lbs. pressure. Holds even at 400 degrees F. Use as a protective coating or as a pipe joint compound. Holds these chemicals and many others:

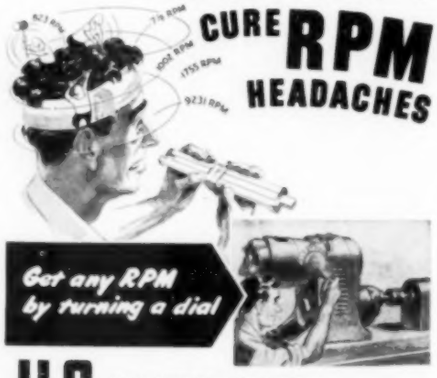
Dries but doesn't harden. Stays flexible.

- → VARSOL
- DRIP OIL
- CARBON TETRACHLORIDE
- → TRICHLORETHANE
- CHLOROBENZENE
- ETHYLENE DICHLORIDE
- → TRICHLORETHYLENE
- TRICHLOROBENZENE
- BENZENE
- → XYLENE
- BUTANE
- PROPANE
- → HEXANE
- PETROLEUM NAPTHA
- SILICONE OILS
- → PETROLEUM OIL
- TOLUOL
- GLYCERINE
- → SULPHUR DIOXIDE
- → WATER
- "FREONS"
- METHYLENE CHLORIDE
- → METHYL CHLORIDE
- PERCHLOROETHYLENE
- ORTHO-DICHLOROBENZENE
- → CUMENE
- CYMENE
- GASOLINE
- → JET ENGINE FUELS
- FORMALDEHYDE
- VEGETABLE OILS
- → KEROSENE
- COAL TAR CHEMICALS
- PAINT SOLVENTS
- → MOST NON-POLAR SOLVENTS
- CHLORINATED SOLVENTS
- AROMATIC SOLVENTS
- → AMMONIA

Leak Lock Comes in 1½ oz. tubes (dozens), pint cans and 10 lb. cans. Order from Highside Chemicals Co., 10 Colfax Ave., Clifton, N.J.

1. USE AS A PIPE JOINT COMPOUND . . . .
2. USE AS A PROTECTIVE COATING . . . . .

If you write maker identify as IEN - 5099



U.S. VARIDRIVE MOTOR

2 to 10,000 RPM

WHEN designing a machine, avoid "rpm headaches" of fixed speed selection. Install a U. S. Varidrive Motor so that your machine can be operated at any and all speeds. *Eliminate guesswork.* Your machine speed can be instantly matched to each specific job or condition by turning a convenient control dial on the Varidrive. Increase performance by adopting the most modern of all drives—*Varidrive.*

Ask for new U.S. Varidrive Bulletin.

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Calif., or Milford, Conn.

If you write maker identify as IEN-5100

Put WILLIAMS-HAGER FLANGED Silent CHECK VALVES into the picture—

and your WATER HAMMER WORRIES ARE OVER

When you install Williams-Hager flanged Silent Check Valves in your water system, you complete the happy picture of a plant . . . rid of costly water hammer. These dependable valves provide positive protection in any position including angular, horizontal and vertical with flow either upward or downward. Disc and seat are renewable—conical spring is non-wearing. Easy to install or reseat, they are available in standard pipe sizes from 1" to 20".

Write for Bulletin WH 851

Write today for your copy of this informative bulletin on Water Hammer, Its Cause, Effect and Control in Piping Systems.

THE WILLIAMS GAUGE CO.
2900 PENNSYLVANIA AVENUE · PITTSBURGH 33, PA.

If you write maker identify as IEN-5101

Cut Sheet Metal

five times faster than hand snips

Stanley Unishear

No. U216 Unishear will cut through the center of a 16 gauge steel sheet at 20 feet per minute. It will trim 14 gauge steel at the same rate of speed.

Safer and easier to use . . . and five times faster than hand snips, Stanley Unishear puts your sheet metal work on a profitable, time-saving basis. Unishear is self-feeding, operator just guides it. Cuts straight lines, curves, tricky angles and notches with hair-line accuracy — leaves a smooth, finished edge along the entire cut.

Practical tool for cutting iron, copper, aluminum, tin, leather, fiber, wire, linoleum . . . almost anything in sheet form. Saves time, material and tempers on hundreds of everyday maintenance jobs . . . cutting patterns, new products, mock-ups, machine guards (illustrated), shelving and many others.

Available in ten models for sheet metal up to 6 gauge. Ask your distributor for a demonstration, or write for information to: Stanley Electric Tools, 414 Myrtle Street, New Britain, Connecticut.

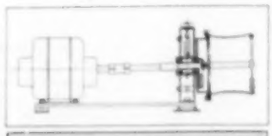
STANLEY
Reg. U.S. Pat. Off.

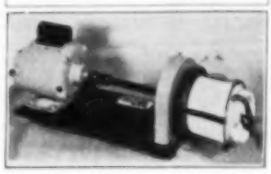
HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

If you write maker identify as IEN-5103

PULVERIZING . . Vibrating machine, laboratory jar, for particle reduction

Source: UNITED STATES STONEWARE CO.
Box 350-A, Akron 9, Ohio





Originally from Germany

Non-rotating head in this new Vibratory Jar Mill is supported by three springs set radially at 120 degrees. The head is equipped with a cage in which a laboratory jar is placed and a motor-driven shaft rotates in ball bearings within its hub. This shaft extends through the hub to a space between it and the base of the jar. On its end is an adjustable eccentric weight. The opposite end of the shaft connects by means of a flexible coupling to a small motor operating at 1,750 rpm.

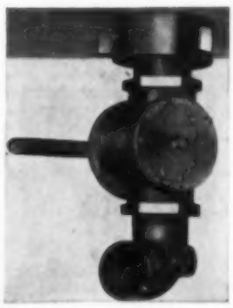
The motor drives the eccentric weight in a circle setting up vibration in step with the rotating speed. This action results in attrition in the material enclosed in the jar for reduction to particle size as small as one micron. The vibrating action is accompanied by slow rotation of the jar within the cage at about 5 rpm. as a result of the activity of the materials in the jar. This prevents caking or packing.

Application can be made on wet or dry materials. Pencil lead, cosmetic talcs, dies, pigments, clay, gypsum, chalk, wood flour, lignite, lacquers, ceramic slip, tungsten ores, coke, slag, iron oxide are examples.

If you write maker identify as IEN-5104

VALVE . . To unload tank cars safely, for hot or cold fluids

Source: MEAD CORNELL & CO.
P. O. Box 2682-A, Cleveland 7, Ohio



Supplements car valve

Aluminum is employed for this new valve in the body and the swivel collar at one end as well as the outlet elbow fitting at the other. The valve plug is made of brass. Overall length from the outlet center to the inlet is 14½ in. and weight is 19 pounds. Two models are available with standard 2-in. or 3-in. outlet. In the side of the outlet fitting is a 1-in. pipe connection so air or steam can be employed to clean out the line between the car and the fluid handling pump. The valve prevents loss of fluid, controls flow at the car outlet. The swivel-collar connection permits pointing the outlet as required for the unloading lines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5105

Only Kalman's crews lay Kalman heavy duty concrete floors. These are highly skilled teams, backed by 36 years' experience in laying over 250,000,000 square feet of concrete. This "know how" pays dividends in longer floor life and low maintenance!

WRITE FOR FREE BOOKLET!

KALMAN FLOOR CO., INC.
110 East 42nd Street, New York 17, N. Y.
Boston · Charlotte · Chicago · Cleveland · Dayton · Detroit
Houston · Los Angeles · Philadelphia · San Francisco

If you write maker identify as IEN-5106

Save Installation Time!

SPECIFY AN ALLIS-CHALMERS COMBINATION STARTER

When you need both a magnetic starter and the protection of a safety switch, a neat installation can be made quickly with an Allis-Chalmers circuit breaker type combination starter. Starter and switch are factory assembled and wired in a single enclosure to save you installation time and space.

You get a starter that has long-lasting contacts, non-carbonizing arc chambers and easily accessible parts. The circuit breaker gives short circuit protection . . . serves as a disconnect switch.

Combination starters are available in sizes 0 through 5 for motors from fractional to 200 hp, 110-550 volts.

Remember, there is an Allis-Chalmers starter for every motor need. All are designed and constructed for long life, easy inspection, speedy installation. Bulletin 14B7132 describes manual, magnetic, combination, and reversing starters for 110-550 volt motors. Contact your nearby A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3715

ALLIS-CHALMERS

If you write maker identify as IEN-5107

RAISE-LOWER CAB CARRIER

Cuts Handling Costs ½ to ⅔

- Permits one man to handle all operations when moving materials with a cab-controlled overhead system. Operator lowers cab to floor or top of materials when attaching or detaching load on hook. No floor men needed. Carrier will not travel until cab is in high position. All motions motorized.

BULLETIN 2006-A sent free on request. Gives complete details.

RAISE-LOWER Cab Carrier BULLETIN 2006-A

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4218 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN-5108

KOHLER ENGINES

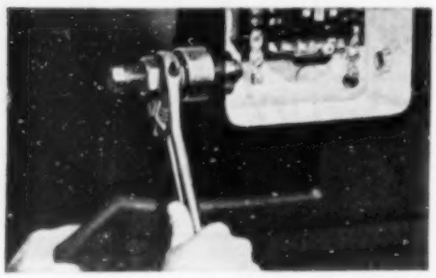
4-Cycle Air-Cooled

Kohler Engines provide reliable power for a wide range of uses. Compact, quick-starting. Engineered and built to the high standards that have won world-wide acceptance for Kohler Electric Plants in construction and other industries. The Kohler mark has been identified with quality products for over three-quarters of a century. Write for information on distributor's sales franchise.

Kohler Co., Kohler, Wisconsin, Established 1873

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN-5109



Accurate "clean" openings for conduit easily made in 1½ minutes or less

Speed conduit installations with GREENLEE Knockout Punches and Cutters. Eliminate time-wasting drilling and filing to enlarge holes. Do the job in 1½ minutes or less with these GREENLEE tools that cut smooth holes up to 4" to accommodate conduit in sizes ranging from ½ to 3½". Do the job neater, faster, easier, this way.

GREENLEE

GET FACTS TODAY on all four types of Greenlee Knockout Punches and Cutters and Greenlee Hydraulic Knockout Punch Driver. Greenlee Tool Co., 1865 Herbert Ave., Rockford, Illinois.

If you write maker identify as IEN-5110

around the world, it's HOOVER BALLS made of

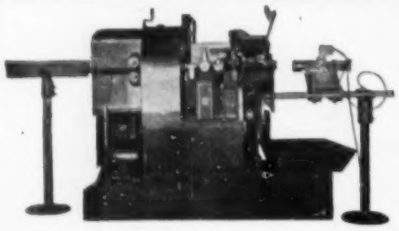
CHROME STEEL • CARBON STEEL • STAINLESS STEEL
BRASS • BRONZE AND MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL and BEARING CO.
Ann Arbor, Michigan

If you write maker identify as IEN-5111

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine — *any length you want.* FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing — Cuts and Chamfers both outside edges of ½" O.D. wall tubing, 8" lengths, every 2.8 seconds.

1¼" Cold Rolled — Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing — Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

4" THREADED STUDS

These popular time saving machines are now available in 6 sizes, handling work up to 6¾" O.D.

Cut and chamfered at one time—in 9 sec.—from 10 ft. length of stock already threaded (4½" U. S. Standard). Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

WRITE for CATALOG

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as IEN-5112

TESTING . . Metallograph to study metals under polarized light

Source: AMERICAN OPTICAL CO.
Box AA, Buffalo 15, N. Y.

Primarily for laboratories

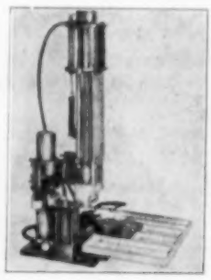
Model 2400P is new design of the company's previously developed metallograph. It is desk mounted and arranged for use under polarized light as well as phase and bright-field illumination. A coated reflector in a vertical illuminator yields polarized light free from elliptical polarization. Full and quarter-wave compensators provide striking color differences to accentuate slight differences in contrast.

The instrument can be operated by a laboratory worker in seated position on the chair provided as part of the standard equipment. Final focusing for photography can be accomplished quickly while examining a specimen.

If you write maker identify as IEN-5113

HAMMER . . Pneumatic impact unit for light riveting, staking, forming

Source: WINTER PRODUCTS INC.
Box 3112-A, Barnum Station, Bridgeport, Conn.



Model RR-6B is a new assembly of the company's pneumatic impact hammer, previously described IEN-6224-48. The new machine will make 100 strokes per min. depending on the nature of the work and the skill of the operator. A new exhaust valve and an air ejector to remove work from the lower die has been added to the assembly. Impact capacity is adjustable to 6 ton. Squeeze rating is to 12 times air-line pressure. Stroke can be set between 1 and 2 inches.

If you write maker identify as IEN-5114

HEAT EXCHANGE . . How to calculate problems on heat transfer described in book

Industrial Press
148 Lafayette St., New York 13, N. Y.

"Industrial Heat Transfer" titles new 336-page textbook written by Prof. F. W. Hutchinson of the University of California. List price is $6. The book features 123 charts to use in finding direct solutions for problems in heat transfer for 70 media from air and acetylene to sulphur dioxide and water. Chapter headings include conduction, radiation, convection, combined heat transfer, forced convection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5115

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates needs of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emporium, Pa.
East. Offices: Times Bldg., Times Sq., New York N. Y.
SUPERIOR STEAM GENERATORS

If you write maker identify as IEN-5116

"Marking Parts in COLOR has speeded up our Production"

—writes a Plant Superintendent

And that's where the Flo-master Felt Tip Marker comes in. The complete range of colored Flo-master Inks permits detailed and accurate identification for assembling, stocking, inspecting. And the Flo-master Felt Tip just glides over any surface—metal, wood, plastic, etc. with fine lines or BIG BOLD lines.

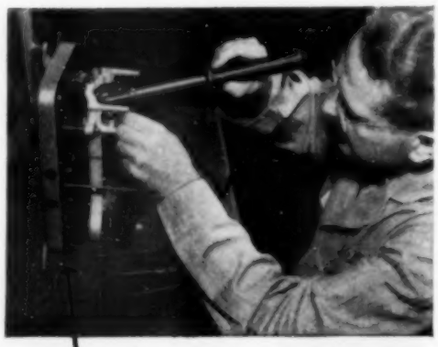
Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—are recommended for dark, hard-to-mark surfaces using the KING SIZE Flo-master. For light colored surfaces use Transparent Inks with POCKET SIZE Flo-master.

This versatile marker is also ideal for marking shipping cartons, boxes, making posters, graphs, sketches.

Contact your supplier or write direct to Cushman & Denison Mfg. Co., Dept. V2, 153 W. 23rd St., N.Y. 11.

Flo-master
FELT-TIP MARKER

If you write maker identify as IEN-5117



from INSTRUMENTS to ARMATURES

American Beauty SOLDERING IRONS for PRODUCTION JOBS LARGE or SMALL!

WRITE FOR DESCRIPTIVE CATALOG PAGES.

dependable · durable · efficient · since 1894

AMERICAN ELECTRICAL HEATER CO.
DETROIT 2, MICH.

If you write maker identify as IEN - 5119

HOW QUICK-LOCK CUTS FASTENING COSTS

QUICK-LOCK speeds up the mounting and demounting of detachable panels, works equally well on curved or straight sheets. It is adaptable to many different fastening applications in the aircraft, automotive, railroad, electrical and appliance fields. Write for literature and samples today.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, New York

Simmons | QUICK-LOCK SPRING-LOCK ROTO-LOCK LINK-LOCK

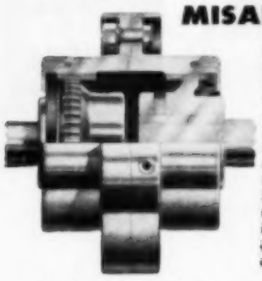
FASTENERS THAT IMPROVE PRODUCTS AND REDUCE ASSEMBLY COSTS

If you write maker identify as IEN - 5120

AJAX DIHEDRAL

FLEXIBLE COUPLINGS

Now Handle Excessive MISALIGNMENT



▶ Design, installation and maintenance men are saving time and money by eliminating necessity for precision alignment. Manufacturing assembly setup and maintenance is reduced from hours to minutes. Exclusive Ajax Dihedral tooth shape makes it possible to keep tooth clearance (backlash) to oil film requirements.

Write for facts on why Ajax Dihedral Couplings are the talk of the industry.

Stock couplings are built to handle misalignment up to 4°

Teeth can be cut to order to handle greater misalignment.

AJAX FLEXIBLE COUPLING CO. INC.
WESTFIELD, NEW YORK

If you write maker identify as IEN - 5121

From shop hoist to truck hoist . . . in seconds!

UNIT "Utility" HOIST gives greater load travel plus three lifting points with capacities ranging from 1000 to 2000 lbs.

Hydraulically operated for shop, truck or machine, the Unit Hoist makes quick work of special handling operations. Setting pipe and water hydrants, working in manholes, reaching over obstructions are easy with the new 12' Boom Extension and optional Sheave Attachment.

REDUCE material handling time. Unit gives you perfect load control plus portability. Portable floor frame permits moving to any job in the shop. Hoist when transferred to any truck equipped with well swings 360° freely and locks in traveling position. *Write for Hoist Bulletin U-2.*

PIN LOCKS HOIST IN SAFE WORKING POSITION

Floor Frame Model

THE BEST WHEN HANDLING: Drums, Motors, Boxes & Crates, Transmissions, Pipe, Tires, Farm Machinery, Fixtures, Hydrants

UNIT — Manufacturers of hydraulic cylinders for original equipment

UNIT MANUFACTURING CO.
1229 HARMON PLACE • MINNEAPOLIS 3, MINN.

If you write maker identify as IEN - 5122

CONNECTOR . . Pin plugs and sockets lock together to prevent disconnecting

Source: ARROW-HART & HEGEMAN ELECTRIC CO.
101-5 Hawthorn St., Hartford 6, Conn.

Standardized dimensions

Hart-Lock trade names new connector made up of a series of pin-type plugs and sockets. Mating units plug together and then lock by twisting through an arc with each other. Reverse twist positions the plug for pull removal from the socket. The line includes two, three and four-wire connector bodies, motor plugs, flush receptacles, regular, rubber and armored caps, cord grips when specified. Current rating is 20 amperes.

If you write maker identify as IEN - 5123

TESTING . . Radiation probe checks radioactivity, protects workers

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

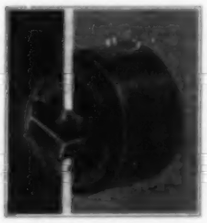
Particularly suited for monitoring

Cylindrical housing, measuring about 2½ by 15 in., takes interchangeable caps containing phosphors to detect alpha, beta, gamma and neutron radiations. It encloses a scintillation counter and two-stage amplifier. Light flashes, produced when nuclear particles strike the phosphor, are converted into electrical pulses for detection and measurement. A connector at the rear of the housing provides for attachment of a cable, in any length to 50 ft., for connection into a scaler.

If you write maker identify as IEN - 5124

TRANSFORMER . . Variable voltage for manual line supply corrections

Source: SUPERIOR ELECTRIC CO.
951 Domers Ave., Bristol, Conn.



Ask for Bulletin P252

Type 10 is a new unit in the company's Powerstat line. It rates 120 volts on 60-cycle single-phase ac. for an output of 0 to 120/132 volts, 1.25 amp., 150/165 va. The unit is designed for 50, 100 and 150-watt applications and will supply a continuously adjustable voltage at any load to rated capacity.

Mounting is in a single hole in a panel. The unit provides a projection on the base to key to the panel. Panel thickness is maximum at ¼ inch. Housing diameter measures about 2¾ inches. Projection to the rear away from the panel is about 2 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5125

ZIP OFF

SCALE
RUST
PAINT
with

AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, thoroughly removes scale, paint, rust, and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

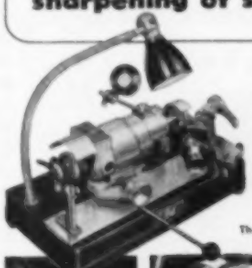
Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS. WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2843 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 5126

This new DUMORE grinder eliminates hand sharpening of small drills



This remarkable new grinder sharpens small twist drills with amazing speed and precision. Does away with expensive maintenance of 2-lip drills, No. 70 to ½". Grinds drill point angles — 90° to 150°, clearance angles 5° to 15°. Reclaims small-size and broken drills. Drills stay sharp longer, last longer.

These features make the Dumore Precision Grinder better

EXCLUSIVE FEED-IN ATTACHMENT — Eliminates breakage and wheel gouging. Allows fine control of finish cuts.

BROKEN DRILL RECLAIMER — Roughing wheel for grinding and reshaping. Drill rest serves as fixture for wheel dresser.

ECONOMICAL WHEEL COST — No expensive shaped wheels. Wide-faced and rounding wheels eliminate frequent wheel dressing.

Ask your industrial distributor for a demonstration, or write

THE DUMORE COMPANY
1519 Seventeenth St., Racine, Wis.

If you write maker identify as IEN - 5127

PROBLEM:

How to Reduce the High Cost of Platinum in an Electrode?

GENERAL PLATE

Provided the Solution with Platinum Clad to Copper . . . A Composite Metal.

A well known manufacturer was faced with the problem of how to cut the cost of a platinum electrode. Pure platinum was ideal but was expensive and the supply short.

The problem was presented to General Plate whose engineers quickly found a solution by bonding a thin layer of platinum to a thicker, less costly layer of copper.

The result was a General Plate composite material that gave the performance of pure platinum, and reduced costs considerably.

In addition, General Plate was able to fabricate the complete assembly providing the manufacturer with further savings.

No matter what your problem, it will pay you to consult with General Plate. Their vast experience in cladding precious to base metals, or base to base metals can overcome your problems . . . often reduce costs.

GENERAL PLATE
Division of Metals & Controls Corp.
75 Forest St., Attleboro, Mass.

If you write maker identify as IEN - 5128

NO DOWNTIME in over a year using a PLATECOIL in a parkerizing tank

The only time this Platecoil was removed in over a year was to take its picture. The single 22" x 23" Platecoil has heated a 100-gallon Parkerizing tank, in daily use, *without downtime* at the Lycoming Spencer Division of Avco Corp. Built of Electro-Polished Stainless Steel, the Platecoil has required no cleaning or repairs. Platecoils will replace pipe coils at a savings in any heat transfer application.

Send for complete technical manual and descriptive Bulletin No. P36.

PLATECOIL
KOLD-HOLD MFG. CO.
LANSING 1, MICHIGAN

If you write maker identify as IEN-5129

Avoid large fire losses with

TRIPLE-ACTION WaterFOG NOZZLE

Get the amazing facts today! Send for this free booklet — no obligation

Triple action! Change instantly from high velocity WaterFOG to straight stream to low velocity WaterFOG. Even untrained, unskilled men can easily use Rockwood's new lightweight SG-48 nozzle. Extinguishes and controls fires in both ordinary combustible and flammable liquids *faster — and with less water, less damage.* Operates at 50 psi at the nozzle. Write for Bulletin C-501R. Distributors in all principal cities.

ROCKWOOD
SPRINKLER COMPANY
40 HARLOW ST., WORCESTER 5, MASS.

If you write maker identify as IEN-5130

Strictly for Profit
CHOOSE CLARK

Solely on the basis of benefit to your business take a thoughtful look at the Five Factors of Profit built into Clark machines:

1. **TIME PROFIT**—Materials move faster, and in synchronized flow. Man-hours for loading and unloading are reduced drastically.
2. **SPACE PROFIT**—Idle space becomes profitable storage capacity.
3. **TURN-OVER PROFIT**—Speeding up the production cycle improves the inventory picture, conserves working capital.
4. **MANPOWER PROFIT**—Human productivity is sharply increased to offset shrinking manpower. Workers prefer the better jobs.
5. **SERVICE PROFIT**—Prompt, efficient service, provided by Clark's nationwide organization. Keeps equipment working.

Any way you look at it, your Clark investment gets you a solid, profitable "most for your money."

CLARK ELECTRIC AND GAS POWERED **FORK TRUCKS**
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49, MICHIGAN
Please send: ☐ Movie Digest ☐ Safety Saves ☐ Basic Facts ☐ Material Handling News
Name
Firm Name
Street
City Zone State
IN PRINCIPAL CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-12

A feature of the editorial listings of manufacturers and their products in Thomas' Register is the alphabetical arrangement under each subject heading. Thus you can spot quickly those companies closest to your range of action as well as to find all of the makers of any product in which you may be interested. You need not labor through long alphabetical lists to find who is in Los Angeles or Spokane or Albany or Boston or Mobile or Houston.

If you need source information on any product subject you will find it in Thomas' Register. If you have the Register at hand, as you can for $15 plus transportation charge, you can secure that information as quickly as each need arises.

OUR COMPETITIVE SYSTEM — IEN S-13

National Business Publications reports on its current advertising campaign under the heading, "Competition turns luxuries into necessities." It uses television as an example, tells how some 5,000,000 television sets were produced in 1951 compared to 6,500 in 1946, matches the 15,700,000 now in service in our United States with the 2,000,000 in the rest of the world.

It warns that our competitive system can be killed . . when industries are run by government . . when taxes are so high they destroy incentive to work and to risk savings in business ventures. It further counsels to watch closely to see that those who represent us in government are working with us to preserve our competitive system and assure a tax structure that leaves enough incentive to make hard work worthwhile, so any man with ability and energy has a chance to earn good money and keep most of it.

U. S. SAVINGS BONDS — IEN S-14

Every check that has been made proves conclusively a material increase in employee participation in the Payroll Savings Plan in purchase of savings bonds when management stands actively behind the Plan and promotes it to all of the workers. Continuation of this action is essential to assist in checking inflation, to preserve economic stability and to further the overall defense effort.

3,000,000 TON EVERY MONTH — IEN S-15

Sustained action is the most important factor of all in the need for scrap at the mills. A one-shot look at your departments will turn up a lot of scrap but the real need is for steady flow month by month. Companies that have had real success with scrap recovery and with continuing profit to themselves are those with individuals or committees definitely assigned responsibility to continue the work. Active machines today become domant scrap tomorrow. Don't let it accumulate except in the mill's scrap yards.

If you write maker identify as IEN-5132

PRECISION MEASURING

SCHERR MICROMETERS

$9.75

Drop-forged steel frame easy to read. "No Glare" graduations. Guaranteed accuracy and unsurpassed workmanship.

For greater savings in dollars and better satisfaction, use "Scherr Tools".

Complete stock. All sizes — MM. or Inch.

MAUSER VERNIER CALIPER

$14.75

For inside - outside and depth measurements in 1/1000, 1/128, 1/10mm and 1/20mm.

If not available from your dealer, order direct.
WRITE FOR ILLUSTRATED CATALOG

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
198-C LAFAYETTE ST. • NEW YORK 12, N. Y.

If you write maker identify as IEN-5133

A SAVING AT EVERY TURN

• Save Money, Floors, Equipment and Time by using DARNELL Casters

DARNELL CORP. LTD. Long Beach 4, Calif. — 60 Walker St., New York 13, N. Y. 36 N. Clinton, Chicago 6, Ill.

If you write maker identify as IEN-5134

MECHANICS Hand Soap..... that won't chafe the skin.....

LIQUA-SAN POWDERED HAND SOAP

Low Cost IDEAL FOR GENERAL USE

HERE'S a low cost morale and efficiency booster . . . it's just soap, but one that treats a man's skin to gentle, yet thorough cleaning, and helps to avoid coarse, rough skin and irritation that may lead to infection. Liqua-San is a man's soap that removes greasy embedded dirt quickly. It lathers fast into thick, rich suds that penetrate into the pores of the skin, dissolving and floating away dirt. It eliminates the threat of infection and contagion that is ever-present when using bar soap.

If your workers are troubled with dermatitis, investigate Powdered Germo-Medica with G-11. It's the amazing new antiseptic soap that helps eliminate skin diseases . . . economically, too! Ask for samples.

WRITE FOR FREE SAMPLE

Huntington LABORATORIES, INC.
HUNTINGTON, INDIANA • TORONTO, ONT.

If you write maker identify as IEN-5135

PLAN NOW... FOR HEALTH SAFETY *throughout your plant!*

Safety is the prime requisite for your workers in plant or office. On that depends continuous production. The installation of Halsey Taylor Coolers and Fountains throughout plant and offices means an abundant supply of contamination-proof cool water at all times, regardless of pressure variation and with minimum cost! Why not investigate the Halsey Taylor line?

HALSEY TAYLOR
Fountains and Coolers

THE HALSEY W. TAYLOR CO. WARREN, OHIO

If you write maker identify as IEN-5136

Read the facts about AIRCO'S NEW No. 20 RADIAGRAPH

. . . So you'll know about the first gas-cutting machine designed to carry Aircomatic® Heliwelding, and other *fabrication* equipment . . .

. . . So you'll be among the first to know how the No. 20 Radiagraph cuts circles, arcs, any length straight lines, simultaneous parallel line – with single or double bevels, and irregular shapes . . .

. . . So you'll know how this 57-lb. one-man portable can be put to work for you, just write us today for your copy of the No. 20 Radiagraph Catalog. Address: Advertising Department, Air Reduction Sales Company, 60 East 42nd St., New York 17, N. Y.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND

AIR REDUCTION

AIRCO

AIR REDUCTION SALES COMPANY · AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Dealers and Offices in Principal Cities

If you write maker identify as IEN-5137

WHY SKILLED PIPE FITTERS Demand RIDGID "400" PORTABLE POWER DRIVE

RIDGID "400"—*bench model or stand with tray, capacity ¼" to 2"—to 12" with geared tools.*

Time-and-work-saving power for hand threaders, cutters, reamers

★ Extra light-weight unit—one man can handle it.

★ Lots of power—universal motor, forward, reverse, won't bog down on large pipe.

★ RIDGID design 3-jaw chuck, chuck wrench ejector; self-centering workholder in rear turns with pipe.

★ Sealed-in lubrication—no oil to spill.

★ See the remarkable "400" at your Supply House!

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN-5139

MARKING . . Self-adhesive tape, transparent plastic over colored back

Source: TAPEMARK CO.
319-23 Cedar St., St. Paul 1, Minn.

$1.50 and $2 per roll

Mark-On trade names a new self-adhesive tape made with a transparent plastic face. The backing carries adhesive. A pressure-sensitive marking material is under the transparent face. When a pen, pencil or stylus is employed to write upon the face, the marking material changes color beneath it to reproduce the drawn or written characters visible from the front.

The tape can be applied to any clean dry surface as on metal, plastic, glass, wood, paper. It is resistant to attack by water, acids and oil. Two widths measure ½ and ⅝ in. in rolls measuring 648 in. in length.

If you write maker identify as IEN-5140

SIGNALING . . Steam siren for air raid alarm installation

Source: STARK MFG. CO.
Ostend & Sharp Sts., Baltimore 30, Md.

Accepted by City of Baltimore

Raid-Larm trade names a new omni-directional steam-operated siren for vertical mounting with control by a solenoid-operated valve. The siren stands 72 in. in height, 35 in. in greatest diameter and weighs 375 pounds. It is made of galvanized steel. The signal is audible over a 5-mile radius.

The equipment is available in complete assembly for manual or electrical operation on 6 to 220-volt dc. or on 110 or 220-volt ac. Required steam pressure is 120 to 150 lb. through a 2½-in. pipe line from plant or other supply.

If you write maker identify as IEN-5141

MAGNIFYING . . Illuminated fixture, 2X or 4X lens and fluorescent lamps

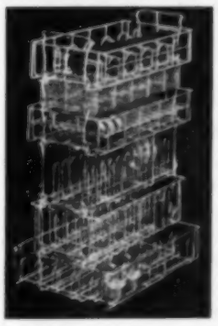
Source: STOCKER & YALE
46-50 Birch St., Marblehead, Mass.

Rectangular magnifying lens measuring 2 by 4 in. is hinged at the front of a fluorescent lighting fixture to make up this new combination inspection unit. A weighted base or one for screw anchoring can be specified. The fluorescent lamps rate 7,500 hours. They provide 500 foot-candles of illumination.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5142

"Carryers"



. . . STACK EASILY LOADED OR EMPTY

The Mid-West patented* integral handle-runner and nesting feature permits easy stacking whether loaded or empty. They are locked sideways and endways even though "Carryers" are of different heights and widths. The whole stack is easily moved by hand truck or sliding on runners of bottom "Carryer." Space is conserved when parts are waiting handling or when "Carryers" are not in use. Parts inventory is easy when loaded "Carryers" are stacked.

*U. S. Patent No. 2361765

CIRCULAR ON REQUEST

PIONEERS SINCE 1927 . . . IN WIRE CARRIERS AND MISC. TOTE BIN BASKETS

"If it's made of wire, we can make it"

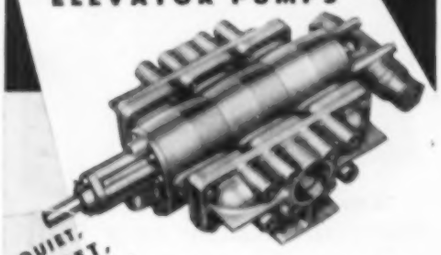
SPECIALISTS IN MEANS OF SUSPENDING MACHINED PARTS

MID-WEST WIRE PRODUCTS CO., INC.
JERRY GRAHAM, President
PENKELL AT LINWOOD • DETROIT 21, MICH.

If you write maker identify as IEN-5143

Announcing NEW ADDITIONS TO THE DEPENDABLE ROPER LINE

HYDRAULIC
ELEVATOR PUMPS



QUIET, QUIET, QUIET!

The newest solution to lift problems . . . dependable Roper pumps that are job suited to elevators and similar specialized service. Models rated (based on 500 p.s.i.) from 900 r.p.m. giving 25 g.p.m. (minimum) to 110 g.p.m. using 1800 r.p.m. (maximum). Available with packed box or mechanical seal; with or without relief valve. Send for Bulletin No. 20.

ROPER Rotary Pumps

GEO. D. ROPER CORP.
305 Blackhawk Park Ave.
ROCKFORD, ILLINOIS

If you write maker identify as IEN-5144

LIQUID HANDLING CAN BE MONEY-SAVING!

Drum and spigot habits take a sharp bite out of profits by wasting industrial liquids, causing slippery floors . . . inviting accidents. There's always a fire hazard, too. Bowser rotary hand pumps for drums . . . or storage tanks with self-measuring pumps . . . have put liquid handling on a money-saving basis in many plants.

For checking incoming tank cars or tank trucks of liquids . . . for economical distribution, processing, blending or packaging . . . your best choice is Bowser precision Xacto meters.

If you have a liquid handling problem we may have a money-saving solution.

BOWSER

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

Regional Offices • Atlanta • Chicago • Cleveland • Dallas
Kansas City • New York • San Francisco • Washington, D. C.
Hamilton, Ont.

If you write maker identify as IEN-5145

PROMPT QUOTATIONS

on Rolled Forms, Stampings & Assemblies

You can have delivery and price figures as fast as you need them on your sub-contract work. We are equipped for volume production to meet your defense requirements.

Just send sketch, blueprint or work sample. No obligation.

Write or phone nearest Greene Co. representative

RACINE, WIS. Greene Mfg. Co., Inc. 1028 Douglas Avenue Phone: 4-7184	MILWAUKEE, WIS. D. E. Stephens 928 N. Broadway MArquette 8-1569	WARSAW, N.Y. Robert F. Foster 128 Wyoming St. Phone: 343-J
DETROIT, MICH. Gebringer & Forsyth 16151 James Couzens Highway TUniversity 3-7300	CHICAGO, ILL. H. R. Schulte Room 306, 605 W. Washington Blvd. ANdover 3-1785	WARREN, OHIO R. G. Alexander Co. 1569 Woodland Ave. N. E., P. O. Box 550 Phone: 5-4235

G-14a

Greene of Racine
GREENE Manufacturing Company, Inc., Racine, Wis.

If you write maker identify as IEN - 5146

NOW! AN EASIER, FASTER WAY
To Apply Sealing Compounds

New ALEMITE
VERSATAL "TORNADO" PUMP

A PRODUCT OF SW SERVICE

- Air operated! Dispenses material direct from original bulk drums.
- Assures positive and uniform delivery through long lines with complete safety.
- Lays hundreds of lineal feet per man-hour with far less product spoilage.

FREE! This book of ideas on how Alemite Versatal equipment can speed, simplify your material handling problems. Address your request to Alemite, Dept. K-52, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal
Sealing Compounds Equipment

If you write maker identify as IEN - 5147

better paint job
with
Red Devil
Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion (22 shakes per second) puts pigment in perfect suspension—quick!

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, or hard-to-keep-mixed blends, Red Devil can arrange to have test samples agitated at a nearby location.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of Red Devil Tools, 129 COIT ST. IRVINGTON 11, N. J. U.S.A.

If you write maker identify as IEN - 5148

Engineering Data
Complete, concise, practical . . . dealing with the application of SYNCHRON timing motors, time machines, gear trains, and D.C. motors for special timing jobs.

To Help You
solve your timing problems, adapting standard timing machines or designing new.

Design for Defense
Hansen D.C. Motors powered Servo units in last World War. Improved products, and enlarged design and manufacturing facilities for precision production are available for defense contracts.

Pulls up to 8 oz. direct load at 1 R.P.M. Operates efficiently at -40° to +160°F. Available with gear trains to convert any speed.

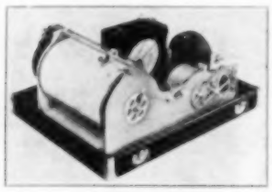
SYNCHRON timing motors

HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA
Send catalog and engineering data to:
Name
Firm
Address
City Zone State

If you write maker identify as IEN - 5149

TESTING . . Recording barograph operates stylus over cylinder chart

Source: AMERICAN PAULIN SYSTEM
1845-49 S. Flower St., Los Angeles 15, Calif.



List is $1,200

Micro barograph is a new motor-driven diaphragm-actuated instrument to trace a record of pressure in a range of plus or minus 1 in. of mercury on a chart mounted on a motor-driven drum. The instrument can be adjusted for operation at any elevation between sea level and 10,000 feet. The 24-hr. chart is graduated in intervals of 0.005 in. of mercury. Chart time is divided into 10-min. intervals. The trace is made by a stylus on a sensitized paper so no ink is required.

Spring wound clocks are employed to drive a lead screw for the time scale and to rotate the drum for the pressure record. The pressure-record clock is directionally controlled by the barometer movement. A recording thermometer with a range between 10 and 110 deg. F. is part of the standard equipment. The instrument is supplied in a carrying case 10 by 14 by 19 inches. Weight with the case is 33 pounds.

If you write maker identify as IEN - 5150

LIGHTING . . Portable electric unit mounts sealed lamp in 4 inch head

Source: U-C LITE MFG. CO.
1048-52 W. Hubbard St., Chicago 22, Ill.

$7.50 without battery

Model 166 is a new assembly in the company's Big Beam line of portable electric lighting equipment. The chromium-plated lamp head is mounted to hinge on the plated handle, which is secured to a 20-gage steel housing finished in red baked enamel. The housing takes a standard 6-volt lantern battery in pressure type contacts for quick battery replacement. An operating switch is mounted on the head. The complete sealed assembly with its enclosed reflector is removed and a new one put in its place if the lamp burns out.

If you write maker identify as IEN - 5151

GAGES . . Recommended procedures for lineal measurement in new 256-page manual

DoAll Co.
252-56 N. Laurel Ave., Des Plaines, Ill.

Company's experience in gages and measurement has been condensed into new textbook, "The Science of Precision Measurement." List price is $3.50. Subjects include clearances and tolerances, gage blocks, gage instruments, sine bars, optical flats, electric comparators, statistical systems of quality control. Recommended procedures are given on the use of the equipment described.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5152

Rolls REELY roll on
ROLL-A-REEL

Go modern . . . save time . . . save labor . . . save cost.

ROLL-A-REEL
enables you to reel or unreel wire, cable, rope . . . easily, quickly . . . economically.
Adjustable slots for wide variety of reel sizes.
Strong . . . with low slanted front and positive front lock for loading or unloading.

Style A: 2,000 lbs. cap. $37.50
Style B: 4,000 lbs. cap. $75.00
• PROMPT DELIVERY. ORDER NOW!

ROLL-A-REEL
327 West Fourth St. Cincinnati 2, Ohio

If you write maker identify as IEN - 5153

SAFE and SATISFACTORY

Washroom Temperatures

The Aerco Heat Exchanger Control is a packaged unit which provides temperature control within two degrees regardless of the rate of flow or the intermittent nature of the service. It predicts conditions by drawing samples from three different parts of the shell, then mixes the samples and actuates the thermostat.

It governs and acts instantly when any water is taken off. Even when oversized, the Aerco shuts off before there can be any over-ride. It is used as a controlled heater for capacities from 5 to 300 g.p.m. and as a booster-control in series with storage tanks.

FOR DISH WASHERS. Here at last is a method which acts instantly and insures temperatures without over-ride. Ask for Technical Bulletin No. 22.

AERCO HEAT EXCHANGER CONTROL

AERCO CORPORATION
214 Lafayette Place
Englewood, New Jersey
1C

If you write maker identify as IEN - 5154

HONESTLY NOW! — HAVE YOU

We manufacture all types of multiple spindle, fixed center, adjustable and individual lead screw tapping heads.

US HEADS SINCE 1915
UNITED STATES DRILL HEAD CO.
CINCINNATI 4, OHIO

If you write maker identify as IEN - 5155

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!

Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The Sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

BUSHINGS MADE IN FOLLOWING SIZES:
3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 1"

Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD, DETROIT 19, MICH.

If you write maker identify as IEN - 5156

TANK CAR is easily freed of fumes for workers' safety.

CHEMICAL STILL is here ventilated while being repaired.

KEEP AIR FRESH

in confined places with COPPUS *Design "A" Ventilator*

Improve workers' safety—health—comfort—efficiency. Get rid of dangerous gases, fumes, stagnant air. Coppus Design "A" Ventilator ventilates tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments, fuselages. For complete information, write Coppus Engineering Corporation, 145 Park Ave., Worcester 2, Mass. Sales Offices in *Thomas' Register*.

Other "Blue Ribbon" Products in *Chemical Engineering Catalog, Refinery Catalog, Best's Safety Directory* and *Mining Catalogs*.

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 5157

SOLID ... as a rod

FLEXIBLE ... *as a wire rope*

TRU-LAY Push-Pulls snake around obstructions. Provide positive remote action for operating clutches, gates, slides, etc. Operate while flexing. Weatherproof, dustproof types. Capacities up to 1000 pounds input.

Write our Detroit office today for DH-287

TRU-LAY PUSH-PULL CONTROLS

ACCO

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as IEN - 5159

CLEANING . . Portable vacuum machine designed for wet and dry operation

Source: HILD FLOOR MACHINE CO.
738-42 W. Washington Blvd., Chicago 6, Ill.

Note steel drum tank

The dirt tank employed in this new portable vacuum machine is a 55-gal. steel drum capable of holding 5 bu. of dry dirt or 40 gal. of recovered liquid. The drum is mounted on a 3-wheel stand. It is equipped with an intake connection and a drain valve. The motor-driven blower that establishes vacuum in the tank is mounted vertically on the top. Equipment includes a 20-ft. vacuum hose made of oil-resistant synthetic rubber with wire reinforcing. Neoprene rubber is employed in the wheel tires.

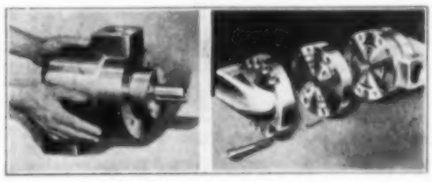
Either liquid or dry dirt can be picked up without adjustment or change of parts. In either case the collected materials by-pass the motor so it cannot be damaged. A separate fan keeps the motor cool.

The machine will leave a floor clean and dry. It will dry up flooded areas. It can be employed to recover coolants and to clean coolant sump tanks. Special attachments are available to clean stock bins and to remove accumulated dirt from overhead pipes, beams, walls, ceilings, machines. It also will pick loose sand out of castings.

If you write maker identify as IEN - 5160

PUMP . . Vane type hydraulic serves also as motor, to 2,000 pounds

Source: DENISON ENGINEERING CO.
1158-62 Dublin Road, Columbus 16, Ohio



Illustrated details in Bulletin P-5

Two chambers established by a ring-type cam are located diametrically opposite to each other to provide radial balance in this new vane-type pump. Rotor and cam are mounted in a ring in a cartridge assembly that applies between the two pump heads. A splined shaft projecting through one head engages the rotor to drive it, or to be driven by the rotor when the unit is installed as a motor. Rotation can be set in desired direction and reversed by reversing the position of the cam in the cartridge assembly.

Four sizes are included in the line, each with two cams establishing different pumping volumes. The eight models have an overall capacity between 2½ and 60 gpm. Corresponding range, in operation as a motor, is from 12 to 257 in. lb. of torque for each 100 lb. of fluid pressure. Foot and flange mountings can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5161

HOUGHTON

COSMOLUBE
MULTI-PURPOSE GREASE

Meets the Needs of Every Industry

THIS ONE GREASE HAS ALL THESE MERITS:

- High Melting Point • Pumps at -20° F.
- Insoluble in Hot or Cold Water
- Resists Oxidation • Adhesive to Metal
- Will Not Separate • Meets All Grease Needs
- Saves Storage Space • Simplifies Inventory
- Eliminates Danger of Misapplication

Write for Bulletin to E. F. Houghton & Co. 303 W. Lehigh Ave., Phila. 33, Pa.

COSMOLUBE
. . . a product of

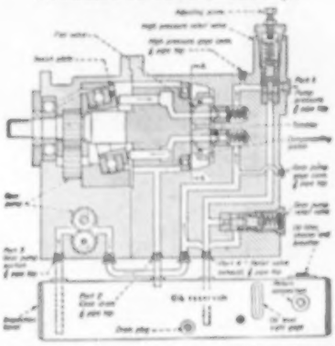
E. F. HOUGHTON & CO.
PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

If you write maker identify as IEN - 5162

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 5163

Masoneilan No. 11

Pressure Reducing Valve

Sets new standard for accurate regulation!

This better-than-ever Masoneilan No. 11 holds reduced steam pressure settings with complete accuracy and dependability. Super-finished integral pilot valve, housing, and main valve respond instantly to slightest variations in reduced pressure — prevents sticking and corrosion.

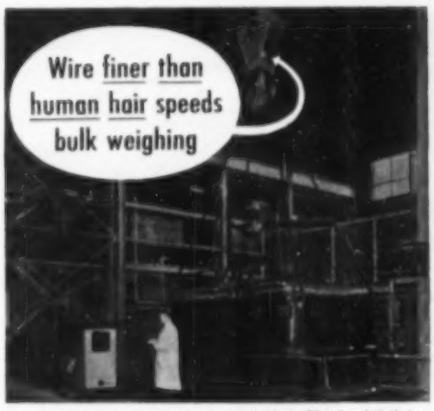
Easier to service, too, all parts may be removed and cleaned with the valve in the line. Maintenance consists of *little more than keeping the valve parts clean.*

Initial pressures up to 250 lbs. reduced to any desired pressure between 10 and 90 lbs. or 75 and 225 lbs. Sizes ½" to 2" with bronze body. (Also available in iron and steel.)

Call your Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 Adams Street, Boston 24, Mass.

If you write maker identify as IEN - 5164



Built into this 150 ton crane hook is a Baldwin SR-4 Load Cell that speeds and simplifies weighing of bulk materials. As loads vary, strains are transmitted to a compression member inside the Load Cell and in turn to a grid of very fine wire. As length of the wire is changed, resistance changes . . . and weights can be measured with an accuracy, speed and safety impossible with more conventional systems.

If you are interested in crane weighing, batch weighing, or any other type of weighing, you'll find Baldwin Load Cells offer a unique solution. Other SR-4 devices can solve your problems in measuring torque, pressure, explosions, etc.

BALDWIN-LIMA-HAMILTON
Testing Headquarters — Philadelphia 42, Pa.
In Canada: Peacock Bros. Ltd., Montreal, Quebec

If you write maker identify as IEN-5165

New Flexible Sealing T-J AIR CYLINDER

Designed with revolutionary application of Super-Cushion

It's *sealed with pressure*—insures positive cushion action combined with automatic valving action for fast return stroke . . . eliminates binding and sticking . . . operates with *low friction, minimum wear,* and *added power* due to higher efficiency. Many more plus features! Wide range of styles and capacities. Write for bulletin 252. The Tomkins-Johnson Co., Jackson, Mich.

36 YEARS' EXPERIENCE

TOMKINS-JOHNSON

If you write maker identify as IEN-5166

SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 - INDIANA

If you write maker identify as IEN-5167

PROTECT YOUR PRODUCTS DURING SHIPMENT *with* S·S·White PLASTIC DUMMY SHIPPING PLUGS AND CAPS

HEX SOCKET TYPE PLUGS FOR N.P.T. PIPE THREADS

PLAIN TYPE PLUGS FOR N.P.T. PIPE THREADS

SHOULDER TYPE PLUGS FOR MACHINE SCREW THREADS

TYPE C CAP NUTS FOR MACHINE SCREW THREADS AND N.P.T. PIPE THREADS

Made of tough, non-brittle plastic. Available from stock molds in a wide range of sizes. Details in BULLETIN P-4601. Copy mailed on request.

CONTRACT MOLDING *in all standard thermoplastic and thermosetting materials.*

THE S·S·White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

If you write maker identify as IEN-5168

CONVEYING . . Metal screws, 1 to 16 in. diameter, specified pitch

Source: KORNYLAK ENGINEERING CORP.
515-19 Communipaw Ave., Jersey City 4, N. J.

Sanitary design

New design of the company's line of conveyor screws employs a continuously-welded joint between the flight and the pipe shaft on both sides of the flight. This weld is ground to a smooth fillet and polished to a No. 4 finish. The flights are made of uniform thickness. There are no lap joints or crevices in which material can accumulate.

The screw is available in any standard or special sizes from 1 in. to 16 in. in diameter in any pitch, thickness and shaft diameter. Stainless steel, Monel Metal, aluminum or other metal can be specified. The company is prepared also to supply complete hoppers, feeders, troughs, drives and spouts as well as the screws alone.

If you write maker identify as IEN-5169

GRINDING . . Diamond dresser produces form on grinding wheel face

Source: BYRD TOOL CO.
2951-55 W. 12th St., Erie, Pa.

List is $395

Any angle tangent to a concave or convex radius can be produced by this new precision dressing tool. Radius range is from 0.032 to 2 in. concave or convex. Wheel size is maximum at 20-in. diameter and 4-in. face. The diamond is set to a gage supplied with the dresser, then is centered by adjusting an end cap on the supporting arm. The arm is raised or lowered to correct height determined by a gage block inserted against a stop. Enclosed slides are hardened and lapped. A cam operates the angular slides. Packaging is in a wood case.

If you write maker identify as IEN-5170

MANAGEMENT . . How to solve tough problems described in book on using your subconscious mind

Updegraff Press Ltd.
Harwood Bldg., Scarsdale, N. Y.

Practical use of the subconscious mind as a silent working partner is the subject of unusual new 114-page book by John K. Williams, "The Knack of Using Your Subconscious Mind." List price is $2.50. Topics include the mind we do not know, first requisite for creative mental life, art of balancing the mind-load, a fortune from a hobby, our subconscious potential.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5171

MORSE "ROCK-A-DRUM" VERTICAL TRUCK

Model #44

WHEELS TO ANY LOCATION!

Specially engineered for use with drums which can be drained only in a vertical position. The Morse Truck is easily rocked into dispensing position by one man. The weight of the load is evenly distributed over the four wheels and adequate clearance is provided under pouring spout.

Write for Bulletin 949

MORSE *MANUFACTURING CO. INC.*
132 Dickerson Street Syracuse 2, N. Y.

If you write maker identify as IEN-5172

for better marking use

FOR MARKING PRODUCTS, PARTS, PACKAGES, TAPES, TAGS, LABELS — FLAT, CURVED, IRREGULAR SURFACES

THE MARKEM METHOD

Markem machines, types, and inks constitute a better method for marking the products of industry. Markem equipment is engineered to solve special marking problems. Behind the Markem method lies nearly half a century of marking experience which may be applied to your marking problem.

MARKEM MARKING MACHINES

There is a Markem marking machine for practically every marking purpose — for direct marking of product packages, products, and product parts — for imprinting labels, tags, tapes, and special gummed, pressure-sensitive or heat-seal backed material, or for producing complete labels. Makes up to many thousand duplicate imprints per hour on almost any kind of material. No special skill needed to operate. Legend and color of imprint quickly and easily changed.

MAKE YOUR MARK WITH MARKEM

Whether you make saws or sox, spark plugs or shoes, TV tubes or tachometers, drugs or hand grenades — whatever your marking problem — find out how easily and economically the Markem method can handle it. Just send a sample of the item to be marked and details of your needs to Markem Machine Company, Keene 2, New Hampshire.

MARKEM — BETTER MARKING SINCE 1911

If you write maker identify as IEN-5173

ARCCO... NOW OFFERS 8 DAY CHARTS and ROCKWELL CHART DRIVES

EIGHT-DAY ARCCO CHARTS are now available for use on practically all Rockwell-Emco, Foxboro and Westcott orifice meters. Eight day charts for other instruments soon available.

With this NEW Chart Drive 11 rotation speeds are possible. Turrets are available for 2, 3, 4, 6, 8 and 12 hours, also for 2, 3, 7, and 8 day rotation. Standard hub gives 24 hour rotation.

ROCKWELL CHART DRIVES are ruggedly built and are sealed for years of trouble-free service. The drives are adaptable to practically every type of instrument using circular charts. The price is $11.55 each. Turrets are $3.85 each F.O.B. Los Angeles Calif. or Tulsa, Oklahoma.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

SEND FOR DRIVE AND CHART BULLETIN

If you write maker identify as IEN-5174

Sarkes Tarzian "Centre-Kooled" SELENIUM RECTIFIERS

THE SELENIUM RECTIFIER "BIBLE"

Most complete book of its kind ever published. 80 pages valuable information about Selenium Rectifiers . . . 48 pages of Radio and Television circuit diagrams . . . 24 pages on Power Rectifiers . . . 3 pages on High Voltage Rectifiers . . . a 7 page cross index replacement guide. Send 50c for your copy or see your distributor.

Sarkes Tarzian, Inc., RECTIFIER DIVISION
Dept. B-2, 415 N. College Ave.
Bloomington, Ind.

If you write maker identify as IEN - 5175

Get the facts on TUFF-TEX*

This modern, economical greaseproof floor tile is manufactured especially for industrial plant use. It's the answer to *many* factory floor problems because it *stands up* beautifully to nearly every kind of wear and tear a factory floor must face!

A really *heavy-duty* floor tile... Tuff-Tex withstands material handling truck traffic with ease.

And it is especially recommended for machining areas where grease and oil abuse is heavy.

Send today for your free copy of "TUFF-TEX Greaseproof Industrial Flooring"...a folder that shows all the Tuff-Tex colors...gives full information and specifications.

THE TILE-TEX DIVISION, *The Flintkote Company, 1234 McKinley Street, Chicago Heights, Illinois.*

The Flintkote Company of Canada, Ltd., 30th Street, Long Branch, Toronto, Canada.

*Registered Trademark, The Flintkote Company

TUFF-TEX... *Greaseproof Industrial Tile*

If you write maker identify as IEN - 5176

DIEHARD'S CASE ISN'T SO UNUSUAL AS YOU MAY THINK!

In all types of industry West representatives hear comments like "our situation is a special one" . . . "an insecticide is bound to impair the quality of our product" . . . and — stranger still — "we don't have any insect problem here!"

Vaposector was formulated for the realist who *has* an insect problem and wants to get rid of it — fast! It's fully three times as concentrated as the standard Grade AA spray . . . yet there's no danger of contamination or odor when used according to directions. Vaposector controls insects by "double penetration". When used with West spraying equipment, it becomes a "dry fog" that *penetrates* the most remote crevice . . . then *penetrates* the insect's outer covering for a permanent kill. There's no place to hide. No time to escape. A Vaposector demonstration has often revealed dead insects in numbers never thought possible — simply because they live and multiply in unseen cracks and crevices.

Vaposector gives more positive control value per gallon than any competitive product. It breaks down into such minute droplets when atomized with specially designed West equipment, that only one ounce is needed to control flying insects in 1000 cubic feet . . . only two ounces for crawling insects. Compare it with an ordinary mill spray and you'll find Vaposector is *over four times as economical in use!* West can supply Vaposector as well as special mill sprays and fumigants . . . residual and contact insecticides . . . spraying equipment — a *complete insect control program* tailored to your exact needs! For further information, write Dept. 13.

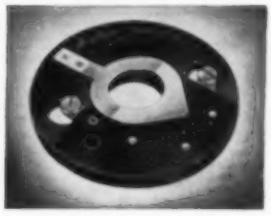
WEST DISINFECTING Company

42-16 WEST STREET, LONG ISLAND CITY 1, N. Y.

If you write maker identify as IEN - 5178

MOTOR CONTROL . . Centrifugal switch for starter winding on small motors

Source: ACRO MFG. CO.
2041 E. Main St., Columbus 16, Ohio



Product component

Positive control is assured for a fractional-horsepower motor at the change-over point for the starter winding circuit by built-in application of this new totally-enclosed switch. The unit illustrated measures 2.8 in. in diameter by 0.5 in. in thickness. It mounts in stationary position to surround the motor shaft and is operated by a centrifugal unit, also built in, to rotate with the shaft. The company is prepared to engineer it into a given motor on quantity order.

If you write maker identify as IEN - 5179

SEALING . . Rubbery dough to close openings in metal, glass

Source: MINNESOTA MINING & MFG. CO.
409-13 Piquette Ave., Detroit 2, Mich.

Small sample upon request

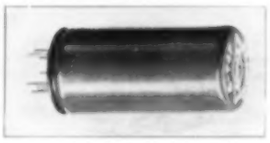
Sealer EC-1167 is a new putty-like "thumbing compound" to fill wide seams, gaps, holes against dust, drafts, moisture. It is not sticky but does adhere well to aluminum, glass, steel and other non-porous surfaces. It remains permanently soft and pliable and provides excellent resistance to water and to weathering. It is a natural gray color.

It will not stain or discolor paint, is suited for continuous duty in temperature to 200 deg. F. A gallon can be extruded into about 375 ft. of ¼-in. diameter bead or about 1,500 ft. of ⅛-in. bead prior to application.

If you write maker identify as IEN - 5180

CONVERTING . . DC-AC chopper converts dc. to pulsating dc. or ac.

Source: AIRPAX PRODUCTS CO.
52 Middle River, Baltimore 20, Md.



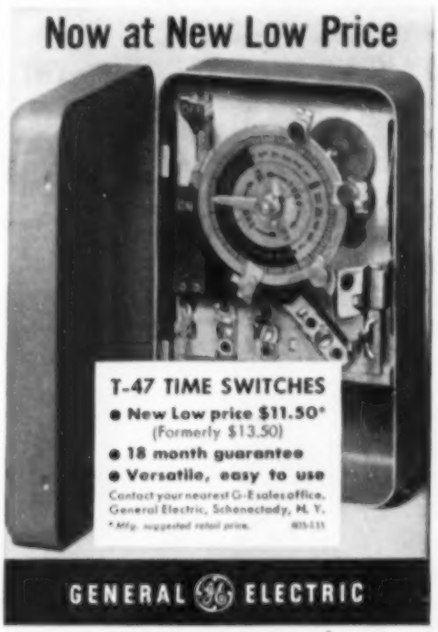
For aircraft

Model C747 is a new midget unit in the company's line of choppers. It employs single-pole double-throw contacts that make before break. They are rated at 100 volts and 2 ma. Output is at 6.3 volts on 400 cycles nominal. The usual frequency range is 380 to 420 cycles. The design will withstand acceleration and vibration. The mechanism is hermetically sealed so it cannot be damaged by humidity or salt spray. The pin type base fits a 7-pin miniature socket. Overall dimensions, about ¾ by 1⅜ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

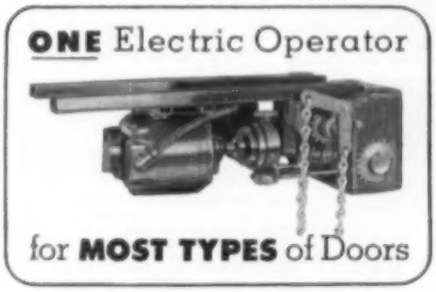
If you write maker identify as IEN - 5181

If you write maker identify as IEN - 5182



If you write maker identify as IEN - 5183

If you write maker identify as IEN - 5184



"BARCOL" EQUIPMENT REDUCES MAINTENANCE COSTS...

This Barcol Electric Door Operator will handle *any* type of overhead, sliding, or steel-rolling door, or sliding gate. Thus ONE make of operator can handle *all the powered doors* in your plant. Your maintenance department, then, stocks only a minimum of stand-by parts. Sole responsibility for helping with your problems rests with ONE factory representative. In this way, costs are reduced and convenience and service are greatly increased. See your "Barcol" representative for detailed suggestions. ASK FOR LITERATURE.

Factory-Trained Sales and Service Representatives in Principal Cities

BARCOL — BARBER-COLMAN COMPANY
114 MILL STREET, ROCKFORD, ILLINOIS

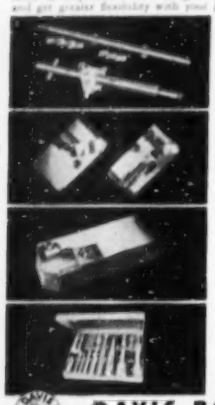
If you write maker identify as IEN - 5185

INCREASE YOUR PRODUCTION ON YOUR PRESENT EQUIPMENT

with Davis complete tooling service

Davis "Complete Tooling Service" is a world-wide sales and service organization that offers you a full line of standard boring tools (capacity — any dia. from ¼" to 50") . . . . plus design and construction of special tools.

Standardize your whole shop on one complete line of modern tools . . . count on one dependable source of supply and engineering help . . . . share in the latest developments in tool design. You can increase production, lower costs and get greater flexibility with your present equipment.



- To meet individual needs, Davis has a wide range of plain and block type line bars. Case hardened bars for jobs with heavy loads. Also available are micrometer adjustable cutter blocks and boring heads that will bore up to a 50 in. dia.
- Single and two-cutter adjustable block type cutters for general purpose boring where rigidity and a wide range of cutter adjustments are needed. Boring range ¾" to 17". Multiple cutter types are in most cases interchangeable with regular blocks. Available with two or more sets of cutters for boring, counterboring, facing.
- With "clamped-on" tipped carbide cutters and massive holders you can use maximum planer feeds with minimum strain upon tip. Made in either right or left hand and will accommodate different style tips.
- Davis sub boring tools speed up boring operations on vertical and horizontal boring machines. Available in sets with sub boring bars accurate to .0005 in. adjustment. Range from ½ to 7 in. dia.

DAVIS BORING TOOL

Div. of Giddings & Lewis Machine Tool Company, Fond du Lac, Wis.

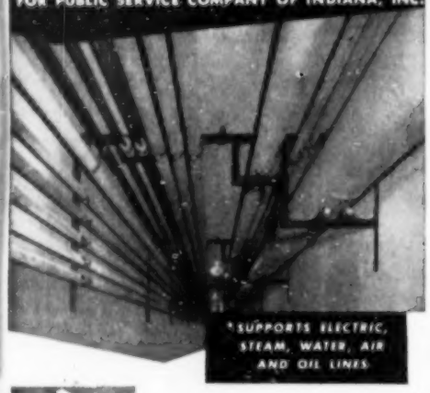
World's Largest Builder of Horizontal Boring, Drilling and Milling Machines • Planer-Type Milling Machines • Large Vertical Boring Mills

If you write maker identify as IEN - 5186

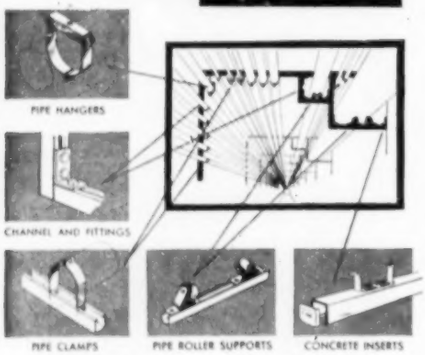
UNISTRUT metal framing system

DOES THE ENTIRE JOB*

FOR PUBLIC SERVICE COMPANY OF INDIANA, INC.



*SUPPORTS ELECTRIC, STEAM, WATER, AIR AND OIL LINES



In this large, main tunnel installation at Plainfield, Indiana, the UNISTRUT system supports all the services in *one neat package*—provides a new and more flexible type of mechanical support for every kind of piping, conduit and cable. Assures exact pitch or slope. Permits adjustments, changes or additions at any time. No drilling, no welding, no special tools or equipment. Conserves steel, reduces manpower hours, cuts over-all costs.

Write for FREE 78-page Construction Catalog

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Illinois Dept. D8

Please send Free 78-page Construction Catalog No. 700.

Name.....

Company.....

Address.....

City.....Zone.....State.....

If you write maker identify as IEN - 5188

RECTIFYING . . Electronic equipment for constant dc. output from ac. line

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.

Mounts on bench or shelf

Model 50220 is a new assembly of regulated-input transformer for operation on 110-volt 60-cycle ac., a rectifier, a No. 5651 voltage reference and a No. 6SN7 control tube. A compensated feed-back circuit results in flat current characteristics over the input range of 80 to 140 volts.

The standard unit is designed for 10-ma. output at 1.4 volt dc. in which current stability is within plus or minus 0.1 per cent. Application is primarily in connection with potentiometer indicators, recorders and controllers, resistance thermometers, strain gages where automatic standardization is not practical and where constant dc. is required.

If you write maker identify as IEN - 5189

ELEVATOR . . Motor driven unit, for loads to 3 ton, lift to 20 feet

Source: ATLAS INDUSTRIAL CORP.
847 39th St., Brooklyn 22, N. Y.

For yard or plant

Retractable casters beneath the base of this new portable elevator permit moving it from one location to another and make it particularly suited for use as a loading platform in connection with trucking operations. The standard design measures 4 by 4 ft. on the load-carrying platform. Other sizes can be specified. Operation is from the floor or the platform or both. Construction is in welded steel. The power equipment mounts at one side and operates cables at the four platform corners to lift the load evenly.

If you write maker identify as IEN - 5190

PROTECTING . . Safety directory classifies products and lists manufacturers

Alfred M. Best & Co.
73-77 Fulton St., New York 7, N. Y.

1952-1953 Edition of Best's Safety and Maintenance Directory contains about 25 per cent new information over that in the previous Third Edition. The 500-page book lists at $5. It illustrates and describes safety products, tells how they are used, lists names and addresses of their makers and typical trade names. Subject groups include fire protection, protective clothing, first aid, radiation protection, plant maintenance, atmosphere control, machine guards, material handling, electrical and lighting equipment, training and working aids.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as IEN - 5191

Compact

STANDARDIZED, RIGHT-ANGLE, BEVEL GEAR *DRIVE UNITS* WITH UNIVERSAL MOUNTINGS

ANGLgears are used wherever precision, high capacity and long life are required. Both basic models are designed for manual or power operated systems. Model R-300 has rating of 1/3 hp at 1,800 rpm, Model R-320, 1 hp at the same speed. ANGLgears are available with 2 or 3-way drive, are lubricated for life, have hardened gears, and antifriction bearings. They also feature 3-bolt side and flanged end mountings with internal pilots. Write for descriptive literature.

SOLD THROUGH LEADING INDUSTRIAL DISTRIBUTORS THE COUNTRY OVER

AIRBORNE
ACCESSORIES CORPORATION
1414 Chestnut Avenue, Hillside 5, New Jersey

R.A.A.C.

If you write maker identify as IEN - 5192

New Self-Propelled Power Generator

This unique, all-purpose power package—developed by Lycoming research and precision production — *propels itself* over even the roughest terrain.

Extra power! Absolute dependability! *Plus* self-propulsion! Lycoming resourcefulness and skill produced this power package that generates 30 volts, develops 120 h.p.—*yet moves under its own power.*

Whether *your* need is air-cooled power for industry . . . or precision machining, product development or high-volume production—look to Lycoming!

AIR-COOLED ENGINES FOR AIRCRAFT AND INDUSTRIAL USES, PRECISION AND VOLUME MACHINE PARTS, STEEL-PLATE FABRICATION, GRAY-IRON CASTINGS

LOOK TO **LYCOMING** FOR RESEARCH, FOR PRECISION PRODUCTION.

Lycoming Spencer Division, Bridgeport; Lycoming Division, AVCO, Williamsport, Pa., Stratford, Conn.

If you write maker identify as IEN - 5193

NOW...PORTABLE GRINDING IS QUICKER, EASIER, SAFER

NORTON *REINFORCED RESINOID* HUB WHEELS . . . the popular semi-rigid Type BD and the new flexible Type BFR . . . are the safest, most durable, most efficient, most versatile wheels you can use on your right-angle portable grinder. That's because they're made of fast-cutting Norton ALUNDUM* abrasive, special resinoid bond and carefully engineered layers of fabric reinforcement for maximum safety. It will pay you to keep both of these Norton hub wheels handy at all times.

...because THESE 2 WHEELS COVER ALL THESE JOBS:

THE JOB	BD SEMI-RIGID	BFR FLEXIBLE
Removing rust and scale, scarfing and beveling before welding	X	X
Cutting away, smoothing and blending welds on fabricated work	X	X
Making V cut to remove old weld materials for salvaging steel parts	X	
Removing burrs and sharp edges from steel sheets and plates	X	X
Roughing off excess weld material before smoothing with coated abrasive discs	X	X
Cutting off gates and risers on brass, bronze and aluminum castings		X
Notching large gates and risers on all kinds of castings		X
Cleaning between teeth of large marine and industrial gears	X	
Removing mold marks and smoothing castings before painting		X
Smoothing flame-cut edges on heavy steel sheets and plates	X	

Write for Complete Data on Norton Reinforced Hub Wheels. NORTON COMPANY, Worcester 6, Mass.

Warehouses in 5 cities. Distributors in all principal cities

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

NORTON ABRASIVES

Making better products to make other products better

If you write maker identify as IEN - 5195

it's paper

BUT IT CUTS THE COST OF MODERN HOMES

Walls in many modern homes are made of wallboard, but you'd never know it because you can't see any seams where the sheets are joined. They're plastered over and they're reinforced with a perforated paper tape to provide a smooth surface that won't crack open. This tape is a special Riegel paper . . . a paper that will stay strong as long as the house.

It's another interesting example of Riegel's ability to make paper for almost any need. We now produce more than 600 grades, and in spite of present conditions we are constantly developing even more new papers for companies who join us in planning for the future. Write us now for more information.

RIEGEL PAPER CORPORATION
P. O. Box 170 · Grand Central Station · New York 17, N. Y.

Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

If you write maker identify as IEN - 5196

PIPE THREAD PROTECTORS

also for plain pipe ends, boiler tube ends, valves and other parts

QUICKLY APPLIED • COMPLETELY SECURE • LOW COST

Kraft paper lining inside a crimped steel shell protects threads or plain pipe ends from damage. The protector is pushed into place, holds firmly, will not shake or fall off.

Immediately available in 1/2 to 3-inch pipe sizes. We can make many types and sizes in large quantities at very low cost.

Ask for samples

PROTECTOR PRODUCTS, INC.
2152 W. 15TH ST., CLEVELAND 13, OHIO

If you write maker identify as IEN - 5197

BRONCO TIRES WON'T ROLL OFF!

There's a BRONCO INDUSTRIAL WHEEL, light weight, rugged cast aluminum, variety of sizes, tread compounds, bearing types to suit your needs.

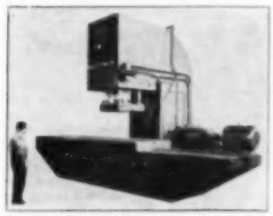
CONSULT YOUR DEALER or write for free catalog.

BRONCO RUBBER PRODUCTS CO.
733 STANFORD AVE Dept. I-5 LOS ANGELES 21 CALIF

If you write maker identify as IEN - 5198

STRAIGHTENING . . Hydraulic press with slide mounted head and work table

Source: E. W. BLISS CO.
1373-77 Raff Road, S. W., Canton 10, Ohio



Pressure also positions work

Pressure can be applied in several positions over work secured to the table of this new hydraulic press by moving the press head forward or back and by moving the table from one side to the other. Both movements are by hydraulic pressure controlled at levers at the operator's position and powered by a motor-driven pump mounted on the press. As soon as the work is located in a desired position it is locked by operating a third control lever. A fourth lever controls the pressure and return movements of the ram.

The press shown in the illustration is typical of design the company is prepared to supply in specified sizes and capacities. This particular unit rates 100 ton, has a ram movement of 18 in. with quick advance at 61 ipm., power movement at 26 ipm. and return 520 in. per minute.

Table top to bottom of the ram, with the ram up, is 24 inches. Throat dimensions from table center to machine column is 25 inches. The table measures 144 by 36 inches. Front-to-back movement in the head is 14 inches. Longitudinal travel of the table is 72 inches. Both of these movements are at 180 in. per minute. Floor space is about 18 by 11 feet. The machine weighs about 66,000 pounds.

If you write maker identify as IEN - 5199

CLEANING . . Washing machine for small parts, instrument assemblies

Source: ZENITH MFG. & CHEMICAL CORP.
50-54 Beekman St., New York 38, N. Y.

List is about $280

Delicate parts or complete instrument mechanisms are loaded into the cast-aluminum basket of this new Instro-Met washing machine. The basket is snapped into position on its ball bearing support for drive by the geared-head universal reversible motor mounted on the driving plate. The plate, in turn, is supported by a centrally located column. The basket is lowered into first one container and then another for washing, rinsing and finally for hot-air drying. The column is splined to guide the plate into correct position for lowering into each container.

The containers are made of span aluminum measuring 10 by 10 inches. The work basket measures 7¼ by 3¾ in. in inside dimensions and is fitted with removable Monel Metal mesh partitions for given work. Heat is controlled by a rheostat. The company is prepared to supply the cleaning solutions as well as the machine. Overall dimensions are about 23 by 26 by 26 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5200

SAVE • COPPER • TIME • INVENTORY • MAINTENANCE • ELECTRODE COSTS

with W·W KAPTRODE* SPOT WELDING ELECTRODES

The new WW Kaptrode Electrode is a small cap type electrode which fits into a semi-permanent Kaptrode Adapter Shank. This in turn fits into any standard Morse taper type holder of appropriate taper size. The entire assembly makes a highly efficient water-tight and electrically-efficient unit.

- COPPER SAVINGS—75% and more with widespread, careful use.
- ELECTRODE COST SAVINGS—20% and up in ordinary shop operations; careful operators save as high as 50%.
- INVENTORY SAVINGS—30% and up; only small supply of shanks needed; electrodes are interchangeable; one shank with proper care should outlast ten or more tips.
- TIME SAVINGS—Kaptrodes quickly, easily inserted and removed.
- MAINTENANCE SAVINGS—in majority of cases, the Adapter Shank may be left permanently in the holder, saving maintenance and changeover time.

For the toughest electrode-consuming job in your plant, order a supply of WW-Kaptrode Electrodes NOW!

*TRADE MARK WEIGER-WEED W·W

Weiger-Weed & Company, Division of Foreseer Metallurgical Corporation 11644 Cloverdale Avenue Detroit 4 Michigan

If you write maker identify as IEN - 5201

M&M reduction machines

M & M Reduction Machines are rapidly gaining favor in industry for converting waste to uniform size for easy handling and in many cases into valuable by-products. Cut your disposal costs with an M & M Reduction Machine. Send us your problems.

MITTS & MERRILL
1014 South Water • SAGINAW, MICHIGAN

If you write maker identify as IEN - 5202

Like a *FAST* V-8 It can really *Pick-up*

Something NEW in a Lifting Magnet

Here is a money-making scrap magnet. Picks 'em up and lays 'em down. Hour after hour, week after week, year after year. Endurance and strength second to none. FEATURES LIGHT WEIGHT AND WELDED CONSTRUCTION and many more advantages worth investigating.

HOW TO GET LIFT THAT LASTS

SEND FOR CATALOG B-1401-A . . . . the whole story on features, capacities, ratings, dimensions — what makes this magnet different, improvements that only Dings — the pioneer magnet builder — offers. Write today.

DINGS MAGNETIC SEPARATOR CO.
4755 West Electric Avenue • Milwaukee 46, Wisconsin

If you write maker identify as IEN - 5203

Get the advantages of AUTOMATIC BAR STOCK CUT-OFF at a fraction of the cost you might expect

with a WELLS SAW *and* WELLS-O-BAR Feed Master

A set-up for automatic repetitive cutting need not be prohibitively expensive. By combining a Wells Metal Cutting Band Saw and a Wells-O-Bar Feed Master you can automatically cut any quantity of identical lengths of bar stock with a modest investment. See your Wells Dealer for complete information or write direct.

Wells

Products by Wells are Practical

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH

If you write maker identify as IEN - 5204

Power positioning of material increases production in sheet feeding operation.

perhaps
YOUR PRODUCTION CAN BE INCREASED THROUGH POWER POSITIONING OF TOOLS AND MATERIALS

PORTELVATOR®
has supplied the answer to others.

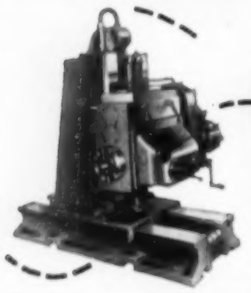
Start a beneficent chain reaction now; write for
BULLETIN P-507

Twenty-five ton capacity, self loading, self discharging die transfer table.

THE Hamilton TOOL COMPANY
915 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN - 5205

FORNEY
BORING and FACING MACHINE



★ Boring
★ Facing
★ Milling
★ Tapping
★ Drilling

WRITE FOR NEW BULLETIN

Designed to eliminate conventional overhang for necessary bar travel providing greater resistance to bending stresses when boring — greater rigidity when milling — increased capacity when facing. Numerous applications can be made in boring, facing, drilling, tapping and milling. Duplicator attachments available. Standard model weighs 10,000 pounds.

FORNEY'S INCORPORATED
Manufacturers of Special Machinery Since 1918
ELM ST NEW CASTLE, PENNSYLVANIA

If you write maker identify as IEN - 5206

Stop wasting money!

Protect your investment in coated abrasives

A new booklet from Armour's Coated Abrasives Division tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for free copy of "How to Store Coated Abrasives."

mail this coupon today

Please send booklet "How to Store Coated Abrasives."
Name
Company
Address
City Zone State

ARMOUR Coated Abrasives
Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 5207

TESTING . . Resistance meter checks cleanliness of aluminum sheets

Source: J. W. DICE CO.
3 Engle St., Englewood, N. J.

Probes contact the work

Model 151-S is a new microhm meter to measure surface resistance in aluminum sheets as an indication of the thoroughness of the cleaning operation prior to welding. Surface resistance is markedly different when oxide covers the sheet than it is when the sheet is clean. The instrument reads direct to 75 microhms. A selector switch cuts in multipliers that permit taking measurements to 750,000 microhms. Power is supplied by a battery enclosed in the housing. Total weight of the new instrument including the battery is 22 pounds.

If you write maker identify as IEN - 5208

CONVEYING . . Link-and-lug chain made of steel, has 3 inch pitch

Source: CONVEYOR SPECIALTIES CO.
664-68 E. 3rd St., St. Paul 6, Minn.

Turn lugs to release

Steel links with case-hardened wearing surfaces are connected by forged-steel T-shaped lugs in the assembly of this new Type C-87 chain. It applies over standard wheels ranging from 6 to 42 in. in diameter and is flexible in two directions. Links can be connected or disconnected after turning the lugs through 90 degrees. In this position the lug slips from the engaging slots. The company is prepared to supply the chain and wheels or to include both in complete conveyor assemblies to meet specified requirements.

If you write maker identify as IEN - 5209

AIR CONDITIONING . . Revised information in 1952 edition of the ASHVE Guide, a 1,520-page book

American Society of Heating and Ventilating Engineers
62 Worth St., New York 13, N. Y.

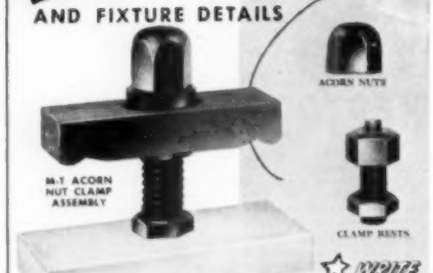
Technical data occupies 1,064 pages of the new 30th Edition of the "Heating, Ventilating and Air Conditioning Guide." List price is $7.50. These data are on 50 major subjects grouped into seven sections on fundamentals, human reactions, heating and cooling loads, combustion and consumption of fuels, systems and equipment, special systems, instruments and codes.

Revisions over the previous edition include new heat-transfer data, expanded information on properties and combustion of fuels, new constants on fuel-consumption formulas, extended data on baseboard radiation, and an added section on fans for high temperature.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 5210

Look to Morton FOR FIXTURE CLAMPS AND FIXTURE DETAILS



☆ WRITE TODAY

AND BE ASSURED OF QUALITY, SERVICE AND FINE WORKMANSHIP

Widest range of types and sizes in the industry . . . Complete Clamp Assemblies or any of their Component Parts . . . Economize by using them as Standards.

For Catalog of our complete line, includes full size tracing templates of each product. Save tooling and designing costs.

MORTON MACHINE WORKS
8421 WOLCOTT STREET • DETROIT 10, MICHIGAN

If you write maker identify as IEN - 5211

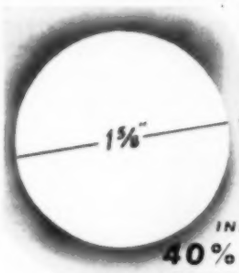
"This Simplified Hose Clamp Offers 8 Cost-saving Advantages"

1. Easier Installation . . . instantly
2. Easier Removal
3. Self-tightening . . . no adjustments needed
4. Positive Seal, even on irregular castings
5. No shellac needed
6. Rust and corrosion resistant
7. No sharp edges to cut or crush hose
8. No fasteners to get loose or bind

Corbin Hose Clamps are available to fit hoses from ⅜" through 2⅝" O.D. . . . for rubber, plastic and fabric hose conveying air, gases or liquids. Make your own test. Send today for complete details. Corbin Hose Clamp Division, The American Hardware Corporation, New Britain, Connecticut.

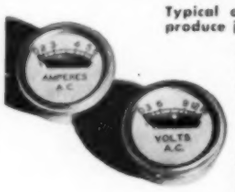
CORBIN Self-Tightening HOSE CLAMPS

If you write maker identify as IEN - 5212



YOU NEED ONLY THIS SIZE SPACE FOR STERLING INDICATING METERS

40% SMALLER THAN FORMER MODELS

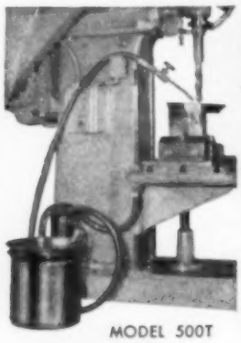


Typical of Sterling's ability to produce just the right meter for your needs at moderate cost is this new small unit for A-C or D-C service. Available in ranges of 1 to 50 V, 1 to 30 amp, and 10 to 1,000 milliamperes—with high readability and accuracy. In dull, black, wrinkle or nickle finishes. Write today for complete facts.

Send for a Sterling catalog today — a complete line of meters for the electronic and automotive field.

STERLING MANUFACTURING COMPANY
9202 DETROIT AVE.
CLEVELAND, OHIO

If you write maker identify as IEN - 5213



MODEL 500T

SAVE 40% on your COOLANT PUMPS

FOR PERMANENT OR TEMPORARY USE

110 V. Centrifugal Pump mounted on 5 gal. heavy steel tank. Pumps from 1 to 500 gallons per hour as required. Handles chips.

ONLY $59.50 f.o.b. factory

8 ft. of oil resisting ¾" discharge and return hose with nozzle. 10 ft. cord with plug.

Write for catalog on complete line.

Brady CORPORATION
18th at Ebright Muncie, Indiana

If you write maker identify as IEN-5214

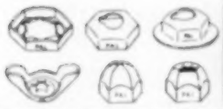
A low-cost WING NUT that *locks* as it tightens!

WING TYPE
PALNUT
TRADE MARK
LOCK NUTS

Incorporating the famous PALNUT double-locking design, these Wing Nuts provide vibration-proof fastening, at lower cost than ordinary wing nuts. Built-in locking action eliminates need for lockwashers. PALNUT Wing Nuts stay tight until finger-released. Available in #8-32, #10-24 and ¼"-20 sizes, in a variety of finishes. Write for samples and literature on entire PALNUT line.

- *Stays tight under vibration*
- *Ample wings permit easy tightening or removal*
- *Priced lower than ordinary wing nuts*

The PALNUT Co.,
59 Cordier St., Irvington 11, N. J
In Canada:
P. L. Robertson Mfg. Co., Ltd.,
Milton, Ontario



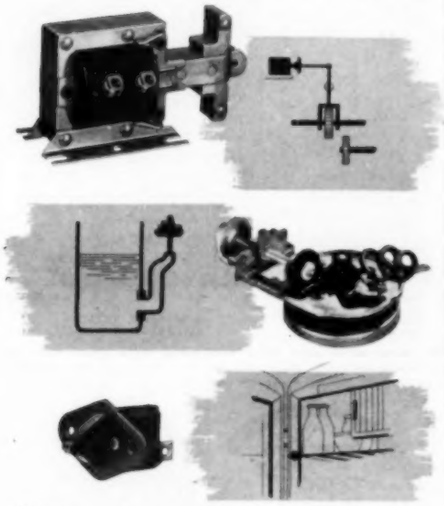
PALNUT
TRADE MARK
LOCK NUTS
for quick, secure fastening at low cost

If you write maker identify as IEN-5215

Custom-Engineered-Custom-Made to your application

SORENG ELECTRICAL SPECIALTIES

Production-engineered to assure top quality at low cost



Custom-made components at production-line prices. Isn't that what *you* want? Then look to Soreng for quality electrical specialties—for both defense and civilian production.

Soreng Solenoids, Switches, Terminals and other components are expertly engineered and manufactured to *your specific* application. That means they do a *better* job throughout a *longer* service life. Strict quality control and mass production are your assurance of *dependable* components at *competitive* prices.

So why not see for yourself what Soreng can do for *you*—on both your regular and defense work. Your inquiry will receive prompt attention—without obligation. Please address Dept. A21.

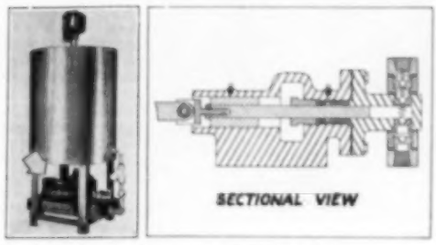
Specialists In Electrical Specialties SM

SORENG MANUFACTURING CORPORATION
9555 Eden Ave., Schiller Park, Ill. (Chicago Suburb)
Plants: Schiller Park, Ill. • Fremont, Ohio

If you write maker identify as IEN-5217

FEEDING . . Proportioning pump and tank for feed to a pressure line

Source: BIRD-ARCHER CO.
4335-39 N. American St., Philadelphia 40, Pa.



Details in illustrated Bulletin 52

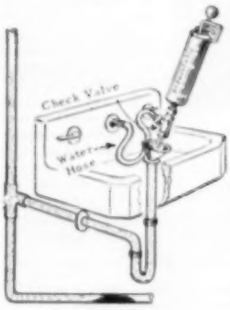
New assembly of the company's variable-capacity motor-driven proportioning pump with an agitator-equipped tank provides a means to maintain measured flow of a liquid chemical to a pressure line. Feed for water treatment into a boiler is an example. The tank is available in 50 or 100-gal. capacities. The pump can be supplied in either of two sizes with maximum capacity at 5.1 or 7.3 gph. in a simplex design or to the same maximum on each side of a duplex assembly.

Operation is at about 72 strokes per minute. Output pressure rating is maximum at 650 pounds. The pump is made with a cast-iron body, stainless-steel valves, valve balls and piston. Overall size is 24 by 48 in. for the 50-gal. assembly.

If you write maker identify as IEN-5218

CLEANING . . Air hydraulic ram applies shock to open clogged drain

Source: HYDRAULIC MFG. CO.
352 Industrial Blvd., Kiel, Wis.



List is $93

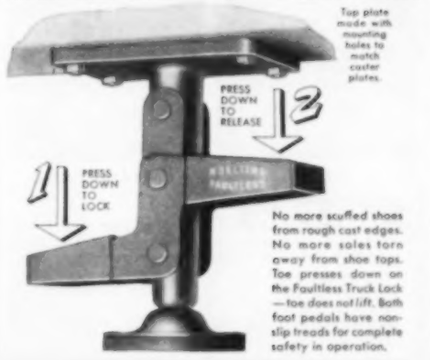
The company announces general availability of its drain-cleaning tool known as the Hydraulic Water Ram following field service over several years. It consists of a cylindrical housing fitted with a hand pump and gage at one end and with an outlet fitting and a filling line and check valve at the opposite end. The outlet fitting is applied to a drain opening. The fill connection is completed to a faucet and pressure is built up in the housing by operating the pump by hand.

The drain is filled with as much water as it will take so there is a solid water column between the ram and the obstruction in the drain. At this point the operator releases the air pressure suddenly by depressing a trigger. The resulting hammer blow removes the obstruction. The housing is a seamless brass cylinder tested to 600-lb. pressure. The gage reads to 160 pounds. The outlet nozzle is fitted with ½-in. pipe threads.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5219

MOULTING **Faultless** ALL-STEEL **TRUCK LOCK** WITH **2 PUSH-PEDALS FOR SAFETY!**



No more scuffed shoes from rough cast edges. No more soles torn away from shoe tops. Toe presses down on the Faultless Truck Lock—toe does not lift. Both foot pedals have non-slip treads for complete safety in operation.

Write for literature and specifications

FAULTLESS CASTER CORPORATION
Dept. IE, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as IEN-5220

Klixon Thermo-Snap controls are widely used as temperature controls, low-limit and high-limit controls, fuel delay switches, purge switches, fan switches, tube and rectifier cooling controls in many military and civilian products.

Actuated by the simple, snap-acting "Spencer Disc," their snap-action opens the circuit with a quick, clean break . . . closes the circuit to a solid make. Their accurate operation is best able to withstand shock, vibration, altitude or motion.

Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges. They provide accurate temperature control wherever used . . . and usually at a cost lower than general purpose controls. Our engineers will gladly help you with your problems. Write for information, today.

SPENCER THERMOSTAT KLIXON
Division of Metals & Controls Corp.
205 FOREST ST., ATTLEBORO, MASS.

If you write maker identify as IEN-5221

FREE!

BRAKE & CLUTCH DEMONSTRATION

• Start it . . . stop it . . . inch it—test the lightning speed, powerful torque, instant response and sensitive control of the new, compact Warner electric brakes and clutches. If you have a machine starting or stopping problem, a Warner electro-magnetic unit may be the answer that adds materially to the efficiency and overall performance of your equipment. A letter to us, or a call to your Warner representative will bring a *working demonstration*—no cost or obligation, of course.

WARNER

WARNER ELECTRIC BRAKE & CLUTCH CO.
BELOIT, WISCONSIN, U. S. A.

If you write maker identify as IEN-5222

JOHNSON wide-rehandling clamshell

EASY-CLOSING
big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

ALL-WELDED
smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: ⅜ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ and 3 cu. yds.

Other Johnson types: General Purpose and Heavy-Duty Digging.

MAIL TODAY

to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS (Koehring Subsidiary)
Send complete facts on ____ cu. yd Wide-Rehandling Clamshell Bucket.
NAME ____
COMPANY ____
STREET ____
CITY, STATE ____ 5245 IEN

If you write maker identify as IEN - 5223

Tells How To

clean raw water reclaim process water

Cuno FLO-KLEAN strainer makes dirty water fit for industrial use, at rates up to 20,000 gpm. Abrasion- and corrosion-resistant. Can be installed in a remote place and forgotten. Some users have saved enough to pay off installation cost in a few months!

Write for FLO-KLEAN bulletin. Cuno Engineering Corporation, Dept. 694F, South Vine Street, Meriden, Conn.

CUNO *Fluid Conditioning*
Removes More Sizes of Solids from More Types of Fluids

If you write maker identify as IEN - 5224

How to beat excessive Cover Wear on V-Belts!

1 Check sheaves for worn grooves

2 Check alignment between sheaves

3 Check tightness of sheaves on shafts

(Sheaves must be tight on shafts to hold proper alignment. Worn grooves result in uneven side wall wear or running on bottom corners of belts, causing premature failure.)

4 INSTALL BULL DOG V-BELTS ... their wear-resistant, durable covers of closely woven, heavy, bias-cut fabric can take brutal punishment where belt meets sheave—also seal against penetration of dirt, grease and moisture.

Get the complete Bull Dog V-Belt quality story on covers, cords and compounds from your BWH distributor—soon.

BWH

BOSTON WOVEN HOSE & RUBBER CO.

Warehouse Stock: 111 N. Canal St., Chicago, Ill.
PLANT: Cambridge, Mass. • P. O. Box 1071, Boston 3, Mass., U. S. A.

If you write maker identify as IEN - 5225

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each gives up to 2000 readings

it's this simple:
• Select the Tempilstik° for your working temperature.
• Mark your workpiece with it.
• The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
130	230	330	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

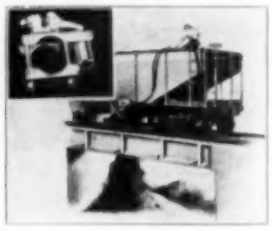
FREE—Tempil° "Basic Guide to Ferrous Metallurgy"—16¾" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
ADDRESS _____

If you write maker identify as IEN - 5226

VIBRATING . . Pneumatic clamp holds company's vibrator in position

Source: VIBER CO.
724-28 S. Flower St., Dept. 63, Burbank, Calif.



Action on a hopper car

New clamp has been added as an attachment to the company's line of pneumatic vibrators. It provides a means to quickly position and remove the vibrator unit for promotion of materials flow from a car, bin, hopper, truck. Air pressure is connected to a cylinder on the clamp assembly after one of the company's vibrators has been selected and secured in the clamping frame and its inlet connection completed also to a source for compressed air.

The assembly is applied on an extended shaft or an angle or channel on the structure where vibration is to be employed. The air pressure is turned on first to the clamping cylinder and then on the vibrator. The clamp alone weighs 25 pounds.

If you write maker identify as IEN - 5227

CORROSION PROOFING . . Plastic tape to protect pipe lines laid underground

Source: DRESSER MFG. DIVISION
102 Fisher Ave., Bradford, Pa.

Applies on the job

Dressertape is a new polyvinyl-chloride tape available at present in 2-in. width and 10-mil thickness. It has electrical resistance of 100,000 megohms and dielectric strength to 10,000 volts. These properties combine with high adhesive firmness, mechanical strength, resistance to attack by sunlight, and excellent aging qualities. The material is not subject to attack by fresh or salt water, acids, alkalis, oil and soil chemicals. It will conform to irregular surfaces, can be applied cold. Protected pipe can be back-filled immediately.

If you write maker identify as IEN - 5228

CONSTRUCTION . . Handbook on design of reinforced concrete structures has 412 pages

Concrete Reinforcing Steel Institute
36-40 S. Dearborn St., Chicago 3, Ill.

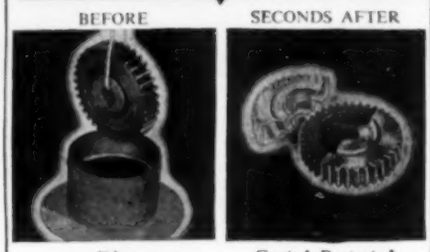
Reference tables in new "CRSI Design Handbook" provide the necessary concrete-outline and reinforcing-steel information against load and span data on a range of pre-designed structures. List price is $5. Major subjects are floor systems, columns, footings, retaining walls, areaways. A data section contains tables, engineering diagrams, formulas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5229

HOT MELT PLASTIC COATINGS for GEARS • TOOLS • PRECISION PARTS

BEFORE — SECONDS AFTER



Dip — Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough, abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

If you write maker identify as IEN - 5230

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

• An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items. — The HAULER for cases, crates, tote boxes, etc. — The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 5231

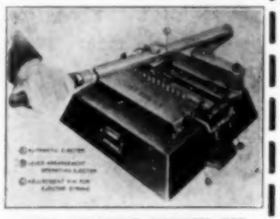
YOUR PRODUCTS ARE "LOST IN A BIG CITY"

UNLESS YOU PROPERLY MARK THEM

"ACROMARK" SIMPLE BUT HIGH-PRODUCTION EFFICIENT MARKING MACHINES ARE THE ANSWER.

THE ONE ON THE RIGHT MARKS 12 FERRULES AT A SINGLE STROKE.

THE ONE BELOW MARKS (FILLS-IN) THE DATA ON NAME-PLATES, ALL ALIKE, AT 15 TO 30 PER MINUTE.



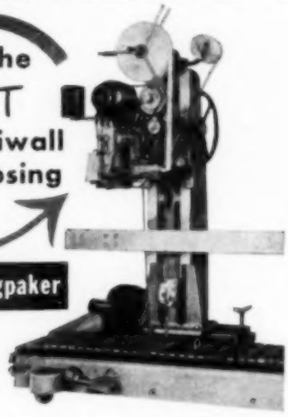
Send a sample or drawing of the product you wish to mark for quotation—no obligation.

OTHER ACROMARK PRODUCTS ARE
Marking and Numbering Machines, Stamps, Dies, Type, Name-Plates, Metal Signs, Engraving, Burning Brands, Marking Inks, and Special Machines for All Kinds of Marking.

The ACROMARK Company
7 MORRELL STREET
ELIZABETH 4, N. J.

If you write maker identify as IEN - 5232

For The BEST in Multiwall Bag Closing



Model ET Bagpaker

Applies a sewn-thru "Dry-Tape" for better protection at lower cost. Tape covers the bag end—famous "Cushion Stitch" goes thru both tape and bag for stronger, tighter, yet easy-to-open closures. Closes textile bags as well as multiwalls. Semi-automatic, self-contained, easy to operate. FAST (closes up to 15 bags per minute). Portable, welded steel construction, clean-cut design for trouble-free operation. Dimensional drawings and detail information available. Write for Booklet ET-U today.

BAGPAK
INTERNATIONAL PAPER COMPANY
220 EAST 42nd ST., NEW YORK 17

If you write maker identify as IEN - 5233

Felt FOR SCIENTIFIC AMERICANS

Felt is an engineering and engineered material, which can be specified, purchased and applied as accurately as any other. There are 16 chief mechanical functions that felt can perform, and many others of less importance. Indeed, for nearly every process or product felt can serve advantageously. Send for this valuable and informative booklet containing 54 pages of data. Ask for "Felt—a Mechanical and Engineering Material." Sent free.

American Felt Company
TRADE MARK REGD.
18 GLENVILLE ROAD
GLENVILLE, CONN.

If you write maker identify as IEN - 5234

Guess Work Can Cost You Money!

Get accurate engineering data quickly with a

DILLON Universal TESTER

Motorized or hand operated. Portable.

For Flat, Round or Special Shapes in all types of materials . . .

With a DILLON TESTER you can do all your own testing in your own plant; saving time and money. There are seven different DILLON gauges, all interchangeable to handle materials with tensile strength as low as .25 lbs. or as high as 125,000 lbs. P.S.I.

DILLON UNIVERSAL TESTERS are compact, ruggedly built, accurate instruments. They are fast and easy to operate—even by untrained help.

DILLON TESTERS are used throughout the world by modern industry because they are economical and dependable, and built to last a lifetime.

Each DILLON TESTER is individually calibrated with an elastic proving ring. These rings are certified by the United States Bureau of Standards and are accurate to within 2/10 of 1%. In actual calibration, the ring is placed in direct series with the Dynamometer gauge. Stress curves are made by highly experienced technicians. Every instrument is individually checked.

FREE! Valuable Tensile Strength Computer and profusely illustrated bulletin. Call, write or wire TODAY.

Precision Instruments for Precision Testing

W. C. DILLON & CO., Inc.
1421-K SOUTH CIRCLE AVENUE • FOREST PARK, ILLINOIS

If you write maker identify as IEN - 5236

DRILLING . . Adjustable drill holder limits drill projection to set length

Source: SCULLY-JONES & CO.
1936 S. Rockwell St., Chicago 8, Ill.

Details in Bulletin 18-50

Drill Stop designates a new taper-shank threaded-body holder fitted with a taper socket to take a drill. An adjustable locking collar rides the threaded body to present a depth-limiting face at its outer end. This face can be brought in contact with a fixture bushing or other means to stop feed movement in order to limit the depth to which the drill will penetrate. The holder itself can be employed in a standard taper socket or in a quick change chuck.

Sizes range from No. 1 to No. 4 Morse or ASA taper for the drill shank and from No. 2 to No. 4 for the holder itself. Axial adjustment of the stop ranges from a little over 2 to a little over 4 in. in eight available sizes. List is $36 to $45.

If you write maker identify as IEN - 5237

PAINTING . . Metal primer particularly for laundry equipment

Source: GLIDDEN CO.
11041 Madison Ave., Cleveland 2, Ohio

Impervious to washing solutions

Nu-Pon is a new priming liquid with ability to resist attack by alkalis. It is intended primarily for laundry equipment and appliances in connection with a standard washing-machine top-coat enamel. It is being used successfully on the interiors of laundry appliances in which a single prime-finish coat is completed with the new primer alone. Application is by flow coating in recommended practice.

If you write maker identify as IEN - 5238

LIGHTING . . Fluorescent fixture takes 85, 90 or 100 watt lamps

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Standard unit redesigned

Type 2FPR-90 is new design of the company's original fluorescent fixture that has been on the market for some years. The new unit adds a rigid lampholder support covering a little more than half of the lamp socket to secure accurate spacing. It is equipped with a snap-in chain-mounting bracket to permit suspension from either one or two points. The bracket is inserted in knock-out slots in the top of the fixture by pressing it through from the inside. A lamp lock to hold the lamps in areas subject to vibration is now standard. Each fixture takes two Type T-17 mogul fluorescent lamps.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 5239

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS · OILS · POWDERS · PASTES

COMBINED LIQUIDS AND SOLIDS

1/500 oz. to 2 Pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as ±1/4%*. Synchronize this self contained filling head with existing production lines and processing systems.

Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

Hot waxes, insulating compounds and asphalts handled without difficulty.

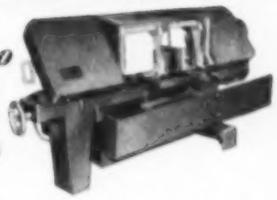
Send full information and samples of material to be tested. Write Dept. 106 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

If you write maker identify as IEN - 5240

GET ACCURACY that SAVES STOCK . . .

. . . get *Kalamazoo* METAL CUTTING BAND SAWS



Here's *real* precision metal sawing that cuts waste to a minimum, saves hard-to-get stock. *Kalamazoo* Band Saws cut bars, rounds, flats, angles, odd shapes to within a few thousandths of size. What's more, there's an absolute minimum of kerf and *no* burr.

You can get Kalamazoo Metal Cutting Band Saws in three sizes . . . for cutting 6" to 12" rounds, 6" x 10" to 12" x 20" flats. Each model can be had with coolant system for continuous cutting. Each is available with casters for complete portability. Write for details on the many exclusive *Kalamazoo* features that spell *better cutting at lowest cost to you.*

MACHINE TOOL DIVISION

***Kalamazoo* TANK and SILO CO.**
511 HARRISON ST., KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 5241

FAST

KESTER FLUX-CORE SOLDER

FAST In Obtaining Wanted Results

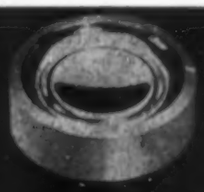
Only Kester has the proven ability to give you the exact percentage of flux content needed for your particular soldering operations.

Free Technical Manual: Send for your copy of "SOLDER and Soldering Technique" today.

KESTER SOLDER COMPANY
4211 Wrightwood Ave., Chicago 39
Newark 5, New Jersey • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 5242



Finer Finishes Faster!

ELGIN DIAMOND
in DYMO Diamond Compound

Pure, virgin diamond in an exclusive field-proved vehicle gives you maximum cutting speed. Certification to Bureau of Standards requirements is your assurance of dependable, predictable results. Write for free demonstration.

ABRASIVES DIVISION
ELGIN NATIONAL WATCH COMPANY
ELGIN, ILLINOIS

If you write maker identify as IEN-5243

Dollar and Cents Angle

on Fafnir Sealed Ball Bearings

Figure it out yourself . . . you may be able to cut manufacturing costs by using one of the several types of Fafnir Sealed Ball Bearings.

These bearings simplify assemblies, cut out machinery operations and eliminate extra parts otherwise needed to provide and retain lubricants.

Find out . . . call in a Fafnir representative. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN-5244

No Miracle, Just *Sound Engineering*

Noise reduced 50%* inside a

BURGESS-MANNING *Acousti-Booth*

In the hushed interior of this roomy, airy Acousti-Booth you hear easily while telephoning. Walls of thick sound-absorbing material and patented construction reduce the loudness of noise by 50%.

Pleasing in appearance . . . simple to install.

Write for Bulletin 103A

* Results of studies by a prominent research group

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN-5245

CUT FINISHING COSTS *50%*

HERE'S HOW: Make the easy profitable "Waste Barrel" test. Cut out a letter-size sample of used abrasive belt, picked at random from your plant waste barrel — include the belt joint, if possible. Send us your sample with completed coupon.

IN MOST CASES, after carefully analyzing your scrap sample, our experienced abrasive engineers can recommend a Jewel Brand Coated Abrasive Belt that will do a better job, faster . . . at greatly reduced costs. Numerous tests have shown that the proper selection of a Jewel Brand Belt can cut finishing costs *in half!* Worth trying?

HERE'S YOUR OPPORTUNITY to take quick action. Send us your test sample and completed coupon now. There is no obligation of any kind attached to this **FREE OFFER.**

ABRASIVE PRODUCTS, INC.
541 Pearl Street, South Braintree 85, Mass.

HELP me complete the Waste Barrel Test.
Enclosed is a sample of used belt from our plant.

NAME ..... POSITION .....
COMPANY .....
ADDRESS .....
TYPE OF PRODUCT ..... MATERIAL .....
WE USE APPROXIMATELY ..... BELTS PER MONTH
BELT LENGTH ..... BELT WIDTH .....

If you write maker identify as IEN-5246

ELECTRIC CIRCUITS . . Conductors bonded to laminate, specified outlines

Source: PANELYTE DIVISION
230 Park Ave., Room 1350, New York 17, N. Y.

For quantity production

The company has established a contract service in which it is prepared to supply complete printed circuits for use in electrical and electronic equipment. Specified circuits are printed on the metal face of a plastic sheet on which copper or aluminum has been laminated. After the circuit is printed the balance of the metal is etched away. Holes are drilled or punched at the ends of the circuits to take connecting wires. The laminated sheets are then "skinned" across the surface of a solder pot with the ends of the wires extending into the solder. Solder that adheres to the ends serves to fix them in place in contact with the circuits.

If you write maker identify as IEN-5247

CONSTRUCTION . . Pneumatic spade takes steels with 3/4 in. square shanks

Source: INDEPENDENT PNEUMATIC TOOL CO.
173-77 N. State St., Aurora, Ill.

Air cooled design

Digger No. 16 is a new unit in the company's line of pneumatic equipment. It is available in two designs as shown in the illustration with inside and outside valve trigger, closed or latched retainer and choice of five chucks for square, hexagon, or combination hexagon and round-shank steels. Weight is 20 pounds. Overall length is 19½ inches. Available accessories include clay spades or scoops, flat picks, saw-tooth chisels, moil points, narrow chisels and chisel blanks.

Construction features a floating valve and air-cushioned piston. Either of two types of retainer can be quickly locked in any of four positions for right or left-hand operations. The closed design employs a rubber bumper to absorb impact shock. Port holes in the retainer dissipate heat.

If you write maker identify as IEN-5248

ENGINEERING . . Centennial observance of engineering to be held this Fall in Chicago

Centennial of Engineering
South Shore Drive & 57th St., Chicago 37, Ill.

September 3 to 13 is the date for the Centennial of Engineering. It commemorates the 100th anniversary of the founding of the first national engineering society in this country. Ask for a copy of 16-page brochure giving advance details.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5249

PAINT OVER RUST WITH **TYGORUST!**

"the 'no-prep' vinyl primer"

- minimizes surface preparation
- dries hard in minutes
- goes under any type finish
- provides excellent adhesion
- inhibits rust formation

TYGORUST is a new and unique primer specifically developed to permit the use of TYGON and other vinyl based coatings on rusted ferrous metals. Its outstanding features include easy application — fast drying — high coverage — excellent adhesion to wet or dry rusted steel, wood, concrete, or previously painted surfaces — excellent adhesion for vinyl, nitrocellulose, alkyd, oleoresinous, or bituminous finishes—and, real resistance to rust formation.

Write for details today — try TYGORUST tomorrow!

U. S. STONEWARE CO.
Akron 9, Ohio

If you write maker identify as IEN-5250

Can You Use BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties

- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets — in a wide range of sizes and specifications — may prove the ideal solution.

WRITE TODAY for complete information, outlining your specific problem or interest.

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

If you write maker identify as IEN-5251

CHEMISEAL (MADE OF TEFLON) PACKINGS

Give Months Instead Of Hours Of Service

NO. 711 CHEMISEAL PACKING

Hundreds of reports say Chemiseal Packings are doing a good job on installations where other packing materials failed completely.

Good reason — they are made of Teflon* which resists all chemical attack excepting only molten sodium and fluorine. Chemiseal packing cannot contaminate the process. They require light gland pressure, permitting free shaft and spindle action, and are good from −110°F. to 500°F.

For rotating or reciprocating shafts, select Chemiseal Type 711 — the packing that imposes least torque on the shaft and not only prevents axial seepage, but seals against stuffing box and shaft as well.

NO. 620EG CHEMISEAL PACKING

For emergency service, select Chemiseal Extruded Packing No. 620EG (graphite impregnated) or No. 620EM (with mica), applicable to valves, pumps, or any stuffing box application. Write for catalog or tell us your specific packing problems.

*DuPont's trademark for its tetrafluoroethylene resin.

UNITED STATES GASKET COMPANY

FLUOROCARBON PRODUCTS DIVISION
FABRICATORS OF TEFLON, KEL-F AND OTHER FLUOROCARBON PLASTICS
CAMDEN 1, NEW JERSEY

If you write maker identify as IEN-5253

AA-291

Camachine®

SLITTERS AND ROLL WINDERS

If you want fast, low cost production of top-quality rolls of paper, plastics, textiles, rubber, and other plain, coated, laminated or tacky-surfaced materials . . . it will pay you to investigate Camachines!

Bulletin 1010 will be sent on request

26-3A, a popular CAMACHINE featuring differential rewinding and positive roll separation. Rolls produced on the 26-3A are ideal for further processing, or for consumer use.

Cameron Machine Company • 61 Poplar Street • Brooklyn 2, N. Y.

If you write maker identify as IEN-5254

THERE'S NOTHING LIKE A

Clarke

You name the problem . . . Clarke has the answer. For every phase of floor maintenance there's a Clarke machine to deliver year after year of rugged, dependable service. For well-kept floors at lower cost there's nothing like a Clarke!

Write for Full Information

CLARKE SANDING MACHINE COMPANY
286 Clay Street Muskegon, Michigan

Sales Representatives and Service Branches in Principal Cities

Porter-Cable floor sanders and edgers are now manufactured and distributed by Clarke Sanding Machine Company. Sales and service of these machines is available through Clarke authorized sales representatives and service branches.

If you write maker identify as IEN-5256

PROTECTING . . Four respirators to exclude industrial fumes and dusts

Source: DeVILBISS CO.
305 Phillips Ave., Toledo 1, Ohio

Light weight is feature

Two cartridge models and two filter models are included in a new line of respirators for application where atmospheres contain nuisance and dangerous fumes and dusts. All are equipped with rubber face pieces and head gear. Fabric covers can be supplied to fit over the rubber.

Model MSC is a cartridge unit to protect against low concentration of light, organic fumes, vapors and gases as in spray painting, degreasing, dry cleaning. It weighs 5⅝ oz. and lists at $4.25.

Model MSE, a double-cartridge design, carries Bureau of Mines Approval for protection under the same conditions as Model MSC. It weighs 9 oz. and lists at $8.25.

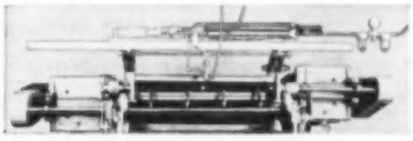
Model MSF is a filter design for protection against light concentrations of nuisance dusts, as in grinding, coal, grain and cement handling. It weighs 3½ oz. and lists at $3.

Model MSD, also a filter design, is approved by the Bureau of Mines for protection against poisonous and disease-producing dusts. It weighs 4½ oz. and lists at $4.25.

If you write maker identify as IEN-5257

POLISHING . . Compound applicator rides spray gun across wheel face

Source: LEA MFG. CO.
14-18 Cherry Ave., Waterbury 20, Conn.



Housing removed to show mechanism

Gun Mover is a new air-operated mechanism initially developed by the company for application at the rear of a Clair polishing and buffing machine to apply liquid compositions. The mechanism makes one complete pass and stops each time the operator closes the circuit through a foot-operated switch. Connection is made to a shop source for compressed air which enters through an adjustable pressure control and an air filter to operate the spray gun and to provide travel pressure in the solenoid-operated air cylinder.

The gun is secured to a moving carriage. Adjustable stops are set to limit the movement. Various sizes are available for coverage of 2 to 40 in. with one gun moving at a uniform speed over a straight-line traverse. The action conserves compound and distributes it evenly over the wheel face. The company is prepared to engineer the equipment for application on machines other than the Clair design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5258

CYCLONE SEPARATORS

Our standard line of separators and years of specialized engineering will prove valuable in

PNEUMATIC CONVEYING
MATERIALS HANDLING
DUST CONTROL
and many other applications

WRITE FOR DATA SHEET

QUINN BROTHERS INC.
1712 N. 2ND ST.
PHILA. 22, PA.

If you write maker identify as IEN-5259

SAFETY INSURANCE

for Magnesium Finishing

AAF'S Type N ROTO-CLONE Bench provides complete control of toxic or hazardous dust. This down-draft ventilated workbench performs all three functions of exhausting, collecting and storing dust in one compact unit. Safety factors include no moving parts, pumps or collecting surfaces, and dust storage under water level. Write for Engineering Bulletin No. 277A.

AAF American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.
Pacific Division Office, San Francisco, California

If you write maker identify as IEN-5260

Assure a Free-Cutting Wheel

IN GRINDING OPERATIONS WITH

Delpark

COOLANT FILTERS

Attrition in grinding operations is reduced to a minimum by Delpark Full-Flowing, Self-Cleaning Coolant Filters. Complete and continuous filtration of the coolant as it comes from the work removes heat bearing solids, prevents loading of the wheel. A free-cutting wheel assures greater accuracy, speeds production with less wheel dressing, longer wheel life. Two to several hundred gallons per minute capacities.

- Fully automatic • No down time for cleaning reservoir • Extends coolant life • Uniform coolant temperature

Delpark
INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

Write for more complete information

INDUSTRIAL FILTRATION COMPANY
5111 Industrial Avenue • Lebanon, Indiana

If you write maker identify as IEN-5261

TAKE A TIP BUY A ZIP!

Whatever your handling problems include, chances are the Zip can save you time and money with fast, effective "thru-the-air" handling. It's a real wire rope electric hoist — with full magnetic push button control. Safer — more dependable — built for lifetime service. 2,000 lbs. capacity; with bolt, hook, or trolley mounting. It's America's finest small hoist.

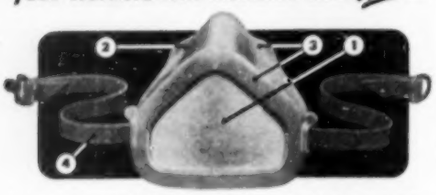
SEND FOR YOUR FREE COPY

This fully illustrated 20-page bulletin will give you many cost-cutting ideas. Write for it today. Ask for NEW ZIP-LIFT Bulletin.

HARNISCHFEGER CORPORATION
4530 W. NATIONAL AVENUE • MILWAUKEE 14, WISCONSIN

If you write maker identify as IEN - 5262

4 Reasons why FLEX-A-FOAM (and only FLEX-A-FOAM) provides Dust Protection your workers will welcome and Wear



1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch — yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter as much as 100 to 1.
2. Perfectly contoured for self-adjusting fit to every size and shape of face — designed for wear with spectacles or goggles with perfect comfort.
3. Positive-locking frames of polyethelene plastic, so flexible and tough they're unbreakable in normal usage. Complete mask weighs only 1 ounce. Attractively styled to suit the most discriminating wearer.
4. Defiance non-skid, natural rubber head-band with adjustable hook-and-eye fasteners holds mask firm and comfortably snug without tension or hair-pulling.

FLEX-A-FOAM FILTER MASK

Sample $1.40 postpaid

Write for new descriptive folder

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

If you write maker identify as IEN - 5263

ROLLA-DUCT POWER & LIGHT UNIT

- Also available for flood-lighting and infra-red heating.
- Sturdy, all-steel tubular carriage. Fully adjustable.
- Electrically safe. Circuit breaker for full worker protection. Entire unit fully grounded.
- Power head on ball-and-socket swivel locks in any horizontal or vertical position.
- Heavy duty indestructo cable—21 ft., three conductor, #12 A.W.G. power cable.
- Approved rating for 20 ampere loads, 115 volt operations.
- Versatile. For use wherever standard wiring is inconvenient to use.

Listed by Underwriters' Laboratories, Inc.
Sold thru leading electrical wholesalers

EVERYTHING IN WIRING POINTS TO

National Electric Products
PITTSBURGH, PA.
Plants in Ambridge, Pa., Torrance, Calif. and Elizabeth, N.J.

WRITE FOR COMPLETE INFORMATION, USE THIS COUPON

National Electric Products Corporation
1352 Chamber of Commerce Building
Pittsburgh 19, Pennsylvania

Please send me complete information on Rolla-Duct. I am interested in using it for _____

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as IEN - 5265

Vacuum is employed instead of heat to thoroughly dry big roller bearings prior to storage or shipping at Timken Roller Bearing Company. The drying equipment includes a bell jar large enough to take bearing assemblies to 40 in. in height and 54 in. in diameter. The jar is served by a vacuum pump capable of reaching a pressure of 3.5 microns absolute. Bearings are placed in the jar at 130 deg. F. to produce a relatively high rate of evaporation.

If you write maker identify as IEN - 5266

Suggestions to assist you in soldering aluminum have been assembled in printed form by Reynolds Metals Company as an article in its house publication "Technical Advisor". The article tells you about fluxes, alloys, the friction method, removal of oxides. It outlines recommended procedure and lists the manufacturers of solders and fluxes. Want a copy?

If you write maker identify as IEN - 5267

Glass fibre impregnated with Teflon is now employed in manufacture of thin-wall tube and pipe at Resistoflex Corporation. The finished product is available in a wall section measuring 0.03 in. or greater and in pilot-plant quantities. Diameter can be specified. Suggested applications are in chemical pipe, corrosion-proof conduit, electric coil forms.

If you write maker identify as IEN - 5268

New transistor, tiny germanium amplifier measuring 0.2 by 0.3 by 0.2 in. overall, appears to be next in the line of electronic developments aimed to minimize size of electronic assemblies and to operate without generating any heat. Electrons are harnessed in a tiny particle of solid matter, germanium, in the transistor as compared with the heated filament from which the electrons are boiled off in an electron tube.

The germanium is contacted by two fine closely-spaced wires that correspond to the terminals in a vacuum tube. Now RCA engineers are talking about vest-pocket radios the size of a cigarette package, a battery-less watch-size radio receiver to operate on power supplied by body heat alone.

If you write maker identify as IEN - 5269

Would you like to know an easy way to clean a dirty boiler gage glass? Here's how, according to Minneapolis-Honeywell Regulator Company. Make up a cleaner solution by mixing Oakite and hot water in a small container. Close the gage valves and open the petcock that drains the glass. After submerging this petcock, or a short extension tube in the container, "crack" the valve at the top of the glass.

Steam pressure will force the water from the glass into the container. Now close the top valve and let vacuum in the glass draw the cleaning solution and water back into the glass. Crack open and close the valve repeatedly to draw in and expel the solution until the glass is clean. Does anyone know a better way?

If you write maker identify as IEN - 5270

Twisted Wire Brushes IN 54 STANDARD SIZES

• Now, for the first time, you can order Mill-Rose precision made twisted wire brushes in 54 standard sizes . . . both single and double spiral for hand or power operation. Size range is from 5/16 inch to 1" diameter and 1¾" to 3" brush length.

Mill-Rose also manufactures a wide line of special twisted wire brushes for many diversified uses in industry . . . all made to close specifications of carefully selected types of wire.

If you need twisted wire brushes for any purpose write today for the Mill-Rose Standard Brush Bulletin . . . If special brushes are needed, send specifications for a quotation.

THE MILL-ROSE COMPANY
1995 EAST 56TH STREET • CLEVELAND 3, OHIO

HIGH PRECISION MILL-ROSE INDUSTRIAL BRUSHES

If you write maker identify as IEN - 5271

On any burnishing problem DEPEND on DU-LITE for a Sparkling Finish

Courtesy Benin Bros. Mfg. Co.

Here's a case....

After tumbling with an ordinary compound, these kids' bicycle bells come out a dull lifeless gray. Substituting Du-Lite's #3 Burnishing Compound completely removed the gray soapy film, and gave the bells a bright mirror finish at a substantial saving of compound per month.

What's YOUR problem?

Du-Lite's service to industry is complete from research on specific metal finishing problems to installation of processing equipment. Du-Lite's line includes cleaners, strippers, blacking agents, wetting agents, passivating agents, rust preventatives, burnishing compounds etc. for any type of metal.

See your nearest Du-Lite Field Engineer or write for more information.

Du-Lite DU-LITE CHEMICAL CORP. MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN - 5272

MANY INDUSTRIES USE

METLKOR
(Reg. U. S. Pat. Off.)

CYLINDER BRUSHES
—when ARRANGEMENT OF MATERIALS is required in manufacturing.

FOR EXAMPLE:

METLKORS raise loose threads from fabrics being sheared, to bring them to the knives; one of many textile uses.

METLKORS give suede leather its characteristic soft, even surface, arranging fibers in a uniform "pattern."

METLKORS move up to and hold certain materials in "cutting position."

HAVE YOU AN ARRANGING OPERATION TO PERFORM?

If so, consider those features of METLKOR Cylinder Brushes.

They have: CORES of aluminum, cold drawn steel, bronze, stainless steel that cannot sag or split, and are practically indestructible BRISTLE (including nylon) suited to the use intended. Renewable when worn.

Other Metlkors are used for Removing and Applying Purposes.

THE MOST ECONOMICAL BRUSHES YOU CAN BUY AND USE

Write for illustrated catalog about the METLKOR for your particular needs.

1877 • DIAMOND JUBILEE • 1952

M. W. JENKINS' SONS, INC.

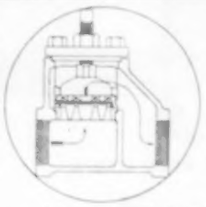
Three-Quarters' Century of Pioneering Brushes for Industry

Cedar Grove, Essex County, New Jersey

TELEPHONE: Verona 8-8327

If you write maker identify as IEN - 5273

AIRCHEK



COMPRESSOR USERS Attention, Please!

The AIRCHEK Valve was developed at the request of a Compressor User for installation in the discharge line of an Air Compressor as a replacement for the usual ball check or flapper-check found very short lived and noisy. Incorporating the same automatic Air Cushion valve as used successfully for many years in all PENNSYLVANIA Compressors, this AIRCHEK offers these advantages: Reduces noise . . . Prevents leakage . . . Dispenses with globe and safety valves . . . Safeguards personnel and plant.

AIRCHEK is inherently a pulsation-fractionator and has won admiration among outstanding industries. It completely fulfills the functions of a check valve in the discharge line of an air or gas compressor to an extent and with a thoroughness and freedom from trouble that sets a new standard of satisfaction and trouble-free service.

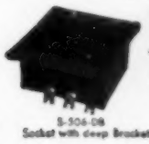
Ask for your copy of Bulletin 509-1

PENNSYLVANIA PUMP & COMPRESSOR COMPANY
EASTON, PENNA.

If you write maker identify as IEN - 5274

For HEAVY DUTY WORK!
Severest Electrical Services

P-506-CE—Plug with Cap


S-506-DB
Socket with deep Bracket

JONES PLUGS & SOCKETS
500 SERIES
Proven Quality!

For 5,000 Volts, 25 Amperes per Contact Alterable by circuit Characteristics.

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10, and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized (rust-proofed). Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

Write for Jones BULLETIN 500 for full details on line.

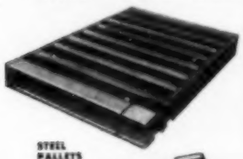
Send for complete data on this new basic improvement!
Howard B. Jones Division

If you write maker identify as IEN - 5275

For STURDIEST CONSTRUCTION
. . . SAFEST PERFORMANCE
. . . LONG LIFE SERVICE

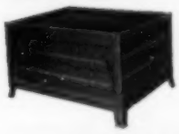
Specify PHILLIPS
MATERIALS HANDLING EQUIPMENT

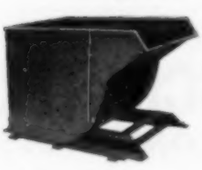
When you specify Phillips Materials Handling Equipment . . . you choose the best . . . because equipment by Phillips is built for a long life of dependable, safe and economical service. A few of these sturdy products are illustrated . . . many others are available to meet any materials handling problem. Write today for bulletins on Phillips materials handling equipment for your requirements.

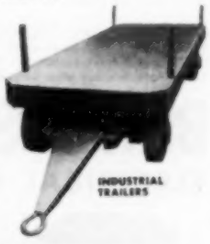

STEEL PALLETS

PHIL-DUMP, JR. USED WITH FORK LIFT TRUCK

MODEL DP-38 SUPER "PHIL-DUMP" TRAILER


MODEL S-20 COLLAPSIBLE "PHIL-BOX"


SKID DUMPS


INDUSTRIAL TRAILERS

Manufacturers Since 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.
MATERIALS HANDLING EQUIPMENT
2300 JANE STREET · PITTSBURGH 3, PA.

IDEAS FOR YOU—Continued

If you write maker identify as IEN - 5277

Manufactured cold by engine-driven refrigerating equipment is taking the place of ice in refrigerator cars with the advent of the Thermo King car. John Morrell & Company has leased twenty-five of the cars to ride between its midwestern plants and points in Florida. The equipment operates automatically and assembles as a self-contained unit at one end of the car. It consists of a gasoline engine, Freon compressor, cooling coil, air-circulating fan and controls.

If you write maker identify as IEN - 5278

Printed circuits are forecast to replace the present cumbersome and expensive "plumbing" for microwave transmission. The circuits can be produced directly from diagrams by etching on a dielectrically-coated base plate or by stamping or embossing. International Telephone and Telegraph Company technicians have done the development work.

If you write maker identify as IEN - 5279

Painting, particularly industrial spray painting, is the subject of a five-day session conducted by Binks Manufacturing Company in Chicago at stated intervals. You are invited to send your paint foremen, supervisors, boss painters to learn about operation, maintenance, gun repair, the causes of faulty spraying, practical application and operation of booths, oil and water extractors, compressors, paint handling equipment. The course is conducted at no charge to the students. Next sessions start May 7th and June 4th.

If you write maker identify as IEN - 5280

Scrap metal to feed the mill furnaces is being collected in a really big way by Chrysler Corporation with the help of its dealers and vendors in a sustained program, month by month. Dormant scrap in the form of tools, jigs, fixtures, obsolete plant structures, scrap cars, miscellaneous scrap from service operations, scrap resulting from operations in production in the Chrysler plants and in the suppliers' plants, all are being assembled and routed back. One month produced a total of 678 ton, a nice little piece in the 3,000,000 ton needed in the form of purchased scrap each month.

If you write maker identify as IEN - 5281

B. B. Sandidge, hospital superintendent, has designed a lighting fixture to apply at a hospital or first-aid bed in a plant to supply light wherever it is needed. The fixture rides in a swivel foot that attaches to the head of the bed. It can be moved down or up on its flexible stem. It is removable from the foot for hand use as an extension light. It's patented. It costs $6 each in lots of ten.

If you write maker identify as IEN - 5282

Virgo Molten Cleaner is a salt that is employed at about 850 deg. F., followed by water quenching and a dip in dilute muriatic acid, to remove sand scale from castings, to deenamel, to clean foreign matter from any metal or alloy that is not attacked by the molten caustic or harmed by the elevated temperature. The maker, Hooker Electrochemical Company, set up a small installation to prove the material.

The company took subjects to work upon from its own lines. Scrapped valves, cast-iron and steel flanges, bolts, nuts, scrap nickel and Hastelloy, nickel pipe. It kept a record of costs and salvage values. It was surprised to find it had made a saving of some $20,000 in salvaged items at a total cost of $3,000. You can do the same thing perhaps with a little installation of your own. The company will tell you "yes" or "no" if you provide information on your salvage problem.

If you write maker identify as IEN - 5283

"Solved our marking problem!"
say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . . "for marking boxes, cartons, packages." "Quick, clean, accurate, easy-to-use. Prints *1000* or more clear, sharp copies from one *stencil* . . *one inking.* Just type, write, trace or draw on low-cost stencil, snap in position and print . . like using a rubber-stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES
At Your Office or Shipping Room Supply Dealer
MULTISTAMP
STENCIL DUPLICATOR

If you write maker identify as IEN - 5284

with
SPENCER VACUUM

Industry has taken to the air to speed production. It's the air of powerful vacuum—Spencer Vacuum which is being used daily for more than 100 startling applications for conveying, recovery, waste disposal, automatic dust-free production and sanitation, particularly in the food, chemical and metal industries.

It is moving mountains of rice from freight cars, hot fly ash from pits and sand from the bowels of ships.

Spencer Vacuum is also speeding bench work, reducing dust conditions and cleaning the finished products. In food it's sanitation, vermin control and conveying. Ask for Bulletin No. 144.

THE SPENCER TURBINE COMPANY · HARTFORD 6, CONNECTICUT
SPENCER HARTFORD

If you write maker identify as IEN - 5285

Fans.. Blowers
FOR ALL INDUSTRY
"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 30".

6 Blade DYNAFLOW Unit
Also available in two and four blade types. Sizes, 16" to 30".

DUCTYPE BLOWER
Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 10" to 30".

SOUTH BEND AIR PRODUCTS, Inc. 407 E. COLFAX AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 5286

Makes "Women's Work" of Handling DOUBLE-FACED PALLETS

Magic "Toggle-Booster" floats the truck into the pallet with minimum jolt or jar.

Easiest, quickest way to handle palletized loads—for short hauls, spotting loads or in congested areas. Just roll the truck into the pallet, lift the load and roll it away. Short stroke pump projects rear wheels through bottom face of pallet—lifts any load up to 4000 lbs. easily.

the SERVICE LEVER-LIFT*

*Write for Circular 411.

INDOOR TRUCKS Made EASIER and SAFER

SERVICE CASTER & TRUCK CORP.
Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.
See Your Classified Telephone Directory For Nearest Distributor

If you write maker identify as IEN-5287

here's a dependable source for aluminum extrusions

• This pioneer in the aluminum extrusion business can furnish your extrusions in quantity and deliver . . . on time. Send prints or sketches for prompt quotation. Buy your aluminum extrusions from the Big Name in the business.

USE THIS SPACE TO INDICATE EXTRUSIONS YOU NEED

MAIL TO YOUNGSTOWN MANUFACTURING FOR PRICES AND DELIVERY

Buy from the BIG NAME in the Aluminum Extrusion Business

YOUNGSTOWN MANUFACTURING, INC.
66-76 S. Prospect St.
Youngstown 6, Ohio

SUPERIOR ALUMINUM EXTRUSIONS

If you write maker identify as IEN-5288

steam circulation—UP
fuel costs—DOWN

with
DUNHAM
VACUUM PUMPS

You get better results from fuel dollars with Dunham Vacuum Pumps. That's because they easily produce—*and maintain*—vacuums up to 26 inches . . . your guarantee of rapid steam circulation . . . shorter "heat up" periods.

Maintenance costs are negligible. There are no moving parts under vacuum. No close tolerance parts to get out of adjustment.

Dunham Pumps are easy to install; take up minimum floor space. For full information, WRITE FOR BULLETIN 1401-11.

DUNHAM

C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada
C. A. Dunham Co. Ltd., Toronto
In England
C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

If you write maker identify as IEN-5289

CLEVELAND
Top Quality
FASTENERS
for particular fastener users

Cap Screws
Hex (bright and high carbon)
Socket, Flat Socket, Fillister, Flat

Set Screws
Square head, cup points
standard—other points special

Milled Studs
Standard or special threads

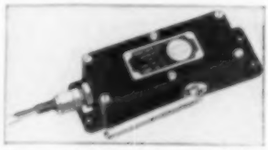
Complete range of sizes from ¼" dia. Also larger than usually listed. Write for catalog.

CLEVELAND *Top Quality* FASTENERS
The Cleveland Cap Screw Company
2017 East 79th Street Cleveland 4, Ohio
Warehouses: Chicago, Philadelphia, New York, Providence
ASK YOUR JOBBER FOR CLEVELAND FASTENERS

If you write maker identify as IEN-5290

SWITCH . . Crank operated has rating of 10 amp. at 115 volt ac.

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.



Adjustable arm position

Crank movement through any arc between 20 and 340 deg. serves to open and close the contacts of this new electric switch. Rotary operation can be employed also in which case the switch is closed through 140 deg. and opened through 220 deg. of each revolution. Operating torque is 2 in. oz. minimum. The contacts rate 10 amp. at 110-volt ac.

The contact springs are made of nickel silver with silver contact points. The mechanism is enclosed in a die-cast housing with a threaded cover for conduit connection. Overall dimensions are 6 by about 2 by 1½ inches. The original development was made for counter operation. The switch is suited also for other installations in connection with equipment requiring indication or control.

If you write maker identify as IEN-5291

STERILIZING . . Ultra-violet fixture destroys airborne germs in a room

Source: CROUSE-HINDS CO.
7th North & Wolf Sts., Syracuse 1, N. Y.

Safe in flammable atmospheres

Type EVF is a new explosion-proof germicidal lamp fixture designed to take a General Electric or Westinghouse single-pin Type-G36T6 Slimline lamp. Ultra-violet energy issues from the lamp at a wave length of 2,537 Angstroms that will kill airborne bacteria, viruses, yeasts, molds, fungi. Rated lamp light is 6,000 hours.

The fixture consists of a tube of explosion-resistant Vycor glass in which the lamp is enclosed. The glass is sealed at both ends into aluminum castings with threaded covers for access and relamping. The housing for the ballast and an extension piece support the two end castings. At each end is a ½-in. conduit hub for mounting. The fixture meets requirements by Underwriters' Laboratories, Inc., for Classes 1 and 2 hazardous locations in service.

If you write maker identify as IEN-5292

FABRICATING . . Facilities in steel and wood summarized in typewritten report on company's service

Wayne Iron Works
Lincoln Highway and Pembroke, Wayne, Pa.

Details on available defense-production subcontract facilities are published in a new 8-sheet report. They cover the company, its plant, machinery, peace-time and military products, key engineering personnel and their background. Products include steel towers, ladders, racks, furniture. Ask for "Defense Production Brochure."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5293

FOR YOUR
STAINLESS STEEL FASTENERS... IT'S ALLMETAL for quality and delivery

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

ALLMETAL
the leading source for Stainless Screws, Nuts, Bolts, Washers, Pins, Rivets. Made right, Priced right. "AN" and Standard Types carried in stock. Phillips Recessed Head Screws and Specials available too.

WRITE FOR CATALOG K

MANUFACTURERS SINCE 1929
ALLMETAL
SCREW PRODUCTS COMPANY, INC.
33 GREENE STREET NEW YORK 13, N. Y.

If you write maker identify as IEN-5294

EASTON

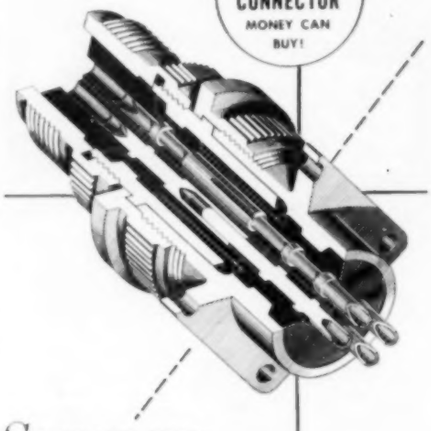
a dependable design and construction service in industrial cars

A-1084

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN-5295

The Finest ELECTRICAL CONNECTOR MONEY CAN BUY!



SCINFLEX ASSURES LOW MAINTENANCE BECAUSE IT PERMITS SIMPLICITY

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX
ELECTRICAL CONNECTORS

Bendix

SCINTILLA MAGNETO DIVISION of Bendix AVIATION CORPORATION
SIDNEY, NEW YORK

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.
FACTORY BRANCH OFFICES: 118 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brewer Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

If you write maker identify as IEN - 5297

REALOCK FENCE

means what it says

Realock Fence provides real locked-in protection for your grounds and property. All fittings have bolts placed so that nuts are removable only from the inside ...thereby insuring safety from intruders.

Realock Fence is heavily galvanized by a special process...gives weather-resistant, durable service year after year with little or no expense for maintenance. Expert erection service is conveniently available.

For additional information write our nearest sales office or consult your classified telephone directory.

EAST: Wickwire Spencer Steel Division, Buffalo, New York
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN - 5298

PRECISION *Silicone* RUBBER PARTS for HIGH and LOW TEMPERATURES

- Retain properties from —110° to +500° F.
- Resist weathering, moisture, oxidation, ozone
- Withstand many chemicals and lubricating oils
- Will not turn to carbon despite heat

STALWART silicone rubber parts assure dependable operation under severe service conditions. They retain their desirable physical, chemical and dielectric properties over a 600°F. temperature range.

Parts fabricated from silicone stocks are resistant to permanent compression, prolonged weathering, ozone, ultra-violet light, chlorinated hydrocarbons, lubricating oils and many chemicals.

STALWART is prepared to mold, extrude, punch, lathe-cut and mandrel-build precision silicone rubber parts to meet individual, S.A.E. and A.S.T.M. specifications.

SILICONE RUBBER STOCKS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Write today for Catalog No. 515R-1.

STALWART RUBBER COMPANY
200 Northfield Road • Bedford, Ohio

If you write maker identify as IEN - 5300

COUNTING . . Wheel type unit is rolled to measure distance, length

Source: M. DUCOMMUN CO.
580 Fifth Ave., Room 2908, New York 19, N. Y.

List is about $20

Curvimeter is a new instrument to roll over the lines on a drawing or layout in order to measure distances. It mounts a contact wheel on two jewel bearings and assembles three scales on its dial reading ⅛, ¼ and ½ in. per foot. For each complete revolution of the long hand that moves over the dial, a small hand moves forward one division to register the revolutions of the long hand. A mistake can be rectified by reversing the movement which causes the hands to reverse.

If you write maker identify as IEN - 5301

PLASTIC . . Rubber modified styrene, tough and impact resistant

Source: BAKELITE COMPANY
30 E. 42nd St., Room 1503, New York 17, N. Y.

Grades QMS-151, QMS-152, QMS-155

Three grades of rubber-modified styrene plastic have been added to the company's lines of materials for extruding and molding. The materials are characterized by impact strength and a varying degree of moldability. They are good electrical insulators and are not subject to attack by moisture and most chemicals. Sheets can be post formed, swedged or blown to large shapes such as refrigerator trays. Extruded sheet can be made in a range of colors with a matte or press-polish finish. Both take printing in good manner.

Typical applications, in addition to molded parts, include extruded pipe and fittings, rattan-like strips, wall moldings, refrigerator door linings, battery cases, molded toys subject to rough use. A 100-ft. length of 1-in. pipe, made by extruding the material, weighs 14 lb. as compared to 168 lb. for the same size of galvanized steel pipe. Moldability can be gaged by the range between 10,000 and 14,000 lb. required to fill a mold for a 10-oz. casting. Toughness of the finished work is maintained to temperatures minus 5 deg. F.

If you write maker identify as IEN - 5302

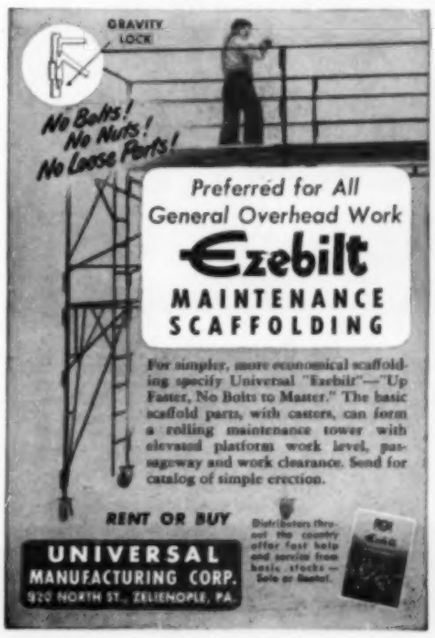
HAMMER . . Soft face design made of plastic pinned on hickory

Source: MATTICKS MFG. CO.
4154-58 E. Pacific Way, Los Angeles 23, Calif.

Seven models are included in a new line of plastic-head hammers in which weight ranges from 1 to 14 oz. and head diameters from ¾ to 2 inches. Corresponding head length is 2¾ to 4 inches. The head is made of resilient cellulose plastic which can be refaced or shaped by a file or grinding wheel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 5303



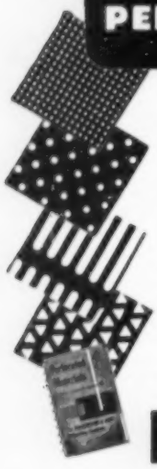
If you write maker identify as IEN - 5304

If you write maker identify as IEN - 5305

If you write maker identify as IEN - 5306

If you write maker identify as IEN - 5307

Have You Considered H & K PERFORATIONS



. . . to answer the problems of eye appeal or ventilation or drainage or acoustical correction, or to provide a satisfactory material to screen, grade or guard your product.

H & K Perforations are furnished in a wide range of sizes, shapes and spacings in all currently available metals and nearly all plastics which are obtainable in the form of plates, sheets and coils.

We can perforate sheets to special sizes and form, weld and otherwise fabricate to your specification.

Tell us your needs and let us make recommendations and quote you prices.

The Harrington & King Perforating Co.

5637 FILLMORE ST., CHICAGO 44, ILL.
114 LIBERTY ST., NEW YORK 6, N. Y.

If you write maker identify as IEN - 5308

engineering research keeps NATIONAL FIRST in laminated plastics

Hardness gets its Full Measure

Important in the production control and development of Phenolite and National Vulcanized Fibre is the degree of punchability of stock. This research operation with the Rockwell Hardness Tester is shown at right.

National Laminated Plastics nationally known—nationally accepted

A tough, horn-like material with high dielectric strength. Excellent machinability. Sheets, Rods, Tubes, Special Shapes. NATIONAL VULCANIZED FIBRE

Good electrical insulating material with great mechanical strength; moisture resistant. Sheets, Rods, Tubes, Special Shapes. PHENOLITE

Just published! National Laminated Plastics Handbook. Write for copy. Your company letterhead—please.

NATIONAL VULCANIZED FIBRE CO.

Wilmington, Delaware — Offices in Principal Cities — Since 1873

If you write maker identify as IEN - 5309

MAXAW 700 magic pivot does it!

$69.50

Heavy Duty—All Ball-and-Roller Bearing—Industrial Quality

Puts *More Power* at the Cutting Edge!

magic • pivot gives you a more powerful saw because it applies a basic engineering principle. Here's how: power always diminishes as it reaches out from its source. **magic • pivot** shortens this distance by using exclusive "stub-radius" blades that put the power of the saw shaft closer to the blade edge. Actually out-cuts other saws costing $115 to $125!

magic • pivot does even more! It makes the MAXAW weight only 10 lbs.—5 to 8 lbs. less than others—cut deeper at 45° with blade to spare in 2-in. dressed lumber—blades lasts twice as long. Get all the facts—do more, save more—with MAXAW.

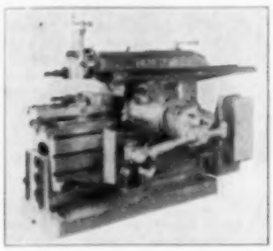
Free Pamphlet— Find out what **magic • pivot** can do for you. Send for Pamphlet 1-42.

Cummins-Chicago Corp.
DIVISIONS
Cummins INDUSTRIALS • Cummins Portable Tools
4748 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 330 Lesder Ave., Toronto

If you write maker identify as IEN - 5310

SHAPING . . Complete machine line employs magnetic clutch and brake

Source: CINCINNATI SHAPER CO.
Carrard & Hopple Sts., Cincinnati 25, Ohio



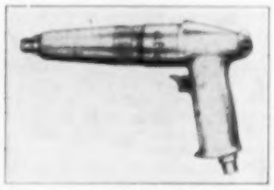
Available on new machines

The company announces availability of any of its shaping machines in sizes from 16 to 36 in. with a new electro-magnetic clutch and brake in the drive. The new arrangement provides for instant starting and stopping upon operating a single control lever. The ram can be positioned quickly and accurately in tool setting. No adjustment is required for the friction surfaces on either the clutch or the brake during their life in service. This is estimated to be at about 15 years of normal operation. Both units engage without grabbing and maintain constant torque throughout their operating life.

If you write maker identify as IEN - 5311

SCREW DRIVING . . Pneumatic tool, reversible design for ¼ inch screws

Source: CLECO DIVISION
5127 Clinton Drive, Houston 20, Texas



Ask for Bulletin S-750

Operation is at 1,000 rpm. for this new reversible Type-9RSPC pneumatic tool. It measures 10 in. overall length, weighs 3¼ lb. and connects to a ¼-in. air hose. The nose mounts a ¼-in. hexagon drive and the assembly includes a three-finger adjustable clutch with slip-impact action for final tightening. Finders and bits can be changed without taking the tool apart. Conversion can be made from screw driver to nut runner in less than a minute.

If you write maker identify as IEN - 5312

ELECTRICAL PRODUCTS . . Technical data on company's line with application information

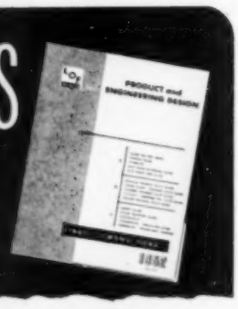
Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Revised 330-page edition of the company's "Architects' and Engineers' Data Book" presents detail information on almost every type of electrical equipment. It is divided into power-plant, electrical-distribution and utilization products. The first covers stokers, turbines and turbine generators. The second covers circuit breakers, power centers, substations, switchgear, transformers. The third covers a range from air conditioning, elevators, lamps and lighting to motors, controls and appliances. The company will be happy to name its nearest district office where you can obtain a copy of Book B-2161-E.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5313

GLASS TIPS



for Designers . . . P.A.'s

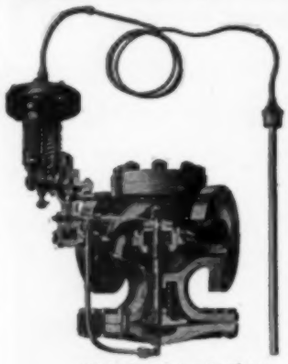
How glass may replace scarce metals in your product. Glass that can be heat resistant—heat absorbent—heat insulating; electrically non-conductive—electrically conductive; patterned or plain—flat or curved—transparent, translucent or opaque. See how L-O-F Glass can help your product.

Write for free bulletin SPD-52

L-O-F GLASS — LIBBEY·OWENS·FORD GLASS COMPANY
9252 NICHOLAS BLDG.
TOLEDO 3, OHIO

If you write maker identify as IEN - 5314

LOW COST Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-100

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 5315

Meyercord Decals

CAN SOLVE YOUR NAMEPLATE PROBLEMS!

FREE!

FIRM: View-lex, Inc.

PRODUCT: Lite-O-Stat

PROBLEM: To eliminate breakage caused by molding instructions into plastic shell of Lite-O-Stat, yet retain legibility, neat appearance at low cost.

SOLUTION: Meyercord nameplate Decals eliminated *all* breakage—saved 48% loss of plastic shells, provided *more legible* instructions and neater appearance at the lowest possible cost.

Write today for complete Meyercord nameplate manual! Address Dept. 26

Send Us YOUR Nameplate Problem

THE MEYERCORD CO., CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 5316

NEW WOODEN SHIPPING BOXES

USES: Perfect for hardware, auto parts, screw machine parts, etc.

DIMENSIONS: (Inside) 28¼" long, 8⅛" wide, 4⅛" deep, or 12" long, 8¼" wide, 11¼" deep. All ⅜" seasoned pine. Toggle fastened lid—no nailing necessary. Cleated ends and lid.

PRICE: 50,000 available, at 85¢ ea., F.O.B. LaPorte, Ind.

CALL, WIRE or WRITE

VECO P.O. Box 298-A Phone 5-4281
BENTON HARBOR, MICHIGAN

If you write maker identify as IEN - 5317

EVERLASTING

the Wear-Resisting Valve

WRITE FOR BULLETIN

WILL NOT STICK . . . because of its non-corrodible materials; WILL NOT WEDGE . . . because the disc travels parallel to the seat; WILL NOT CLOG . . . because of its straight through flow; WILL NOT LEAK . . . because its seal is kept drop-tight by the self-lapping action of the disc rotating on the seat whenever the valve is opened or closed.

EVERLASTING Valves are literally unequalled for many services on process lines, emergency shut-offs, equipment outlets, boiler blow-off, fire protection, etc., and are suitable for all fluids.

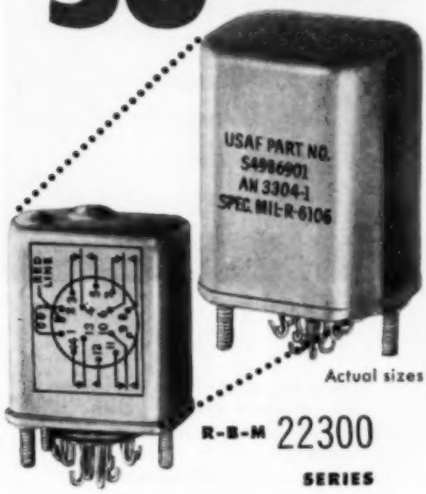
EVERLASTING VALVE CO.
49 Fisk Street — Jersey City 5, N. J.

Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

Everlasting Valves
for everlasting protection

If you write maker identify as IEN - 5318

50% SMALLER LIGHTER



Actual sizes

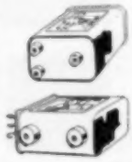
R-B-M 22300 SERIES

Hermetically Sealed Relays

The R-B-M 22300 hermetically sealed telephone type relay is the electrical and mechanical equivalent of AN 3304-1, except for smaller size and mounting dimensions.

An improved armature design, plus high temperature molded nylon coil bobbin, provides greatly improved magnetic efficiency and enables R-B-M to reduce the overall size of the relay. The R-B-M 22300 design still retains palladium cross-bar contacts identical to those used in the larger size.

Maximum contacts—6 Form A and 4 Form C—3 ampere 28 Volts. D. C. coil construction only. Maximum coil resistance 5000 ohms. Minimum power .75 watts. Also available in AN 3304 can for dynamotor or low capacitance application.



Optional Mounting Arrangements

Write Dept. L-5 for ASR Bulletin.

R-B-M DIVISION ESSEX WIRE CORP.
Logansport, Indiana

MANUAL AND MAGNETIC ELECTRIC CONTROLS FOR AUTOMOTIVE, INDUSTRIAL, COMMUNICATION AND ELECTRONIC USE

If you write maker identify as IEN - 5320

CONVEYING . . Wheel type sections rate 1,000 lb. distributed uniformly

Source: MARKET FORGE CO.
23-27 Garvey St., Everett 49, Mass.

Adjustable floor stand

Ball - bearing wheels, 2 in. in diameter by ⅝ in. in width, are spaced on about 3-in. centers in this new Load-Veyor. The sections measure 12 in. in width by 5 and 10 ft. in length in straight runs. End connectors are interchangeable with the majority of other wheel conveyors of the same size. Weight of the 10-ft. section is 69 pounds. Standard design places the wheels above the side channels so the conveyor will handle over-hanging loads.

If you write maker identify as IEN - 5321

STEEL . . Mild tempered alloy heat treats for hardness or toughness

CARPENTER STEEL CO.
351 W. Bern St., Reading, Pa.

prticularly for maintenance use

No. 5-876 is a new alloy steel supplied in mild tempered form to be readily machinable as received. Average tensile strength in this condition is 135,000 lb. per sq. in. and Brinell hardness reads 275.

The steel can be employed to manufacture parts particularly for maintenance such as gears, racks, clutch pins, locking pins. These parts, when drawn between 400 and 550 deg. F., present high surface hardness and wear resistance combined with strength and toughness to withstand shock loading.

It can be made into parts such as shafts, axles, bolts, studs and then drawn between 700 and 1,200 deg. F. to produce tough pieces for services that do not require high surface hardness, but must have the greatest possible strength. The steel is available from warehouse stock, annealed or treated to test.

If you write maker identify as IEN - 5322

STORING . . Drawing cabinet, standard five drawer steel sections

Source: DIEBOLD INC.
900 Mulberry Road S. E., Dept. EF, Canton 2, Ohio

Sections can be added

Storage space for tracings in this new cabinet is normal at 150 per drawer and maximum at 265 without undue crowding. The drawers will handle sheet sizes maximum at 48 by 36 inches. The unit occupies a floor space measuring 51 by about 42 inches. The standard section is 15½ in. in height. The drawers are mounted on roller bearings. A section employs a 4-in. dust-proof base and a 1-in. top panel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5323

The pre-assembled nut and "SHAKEPROOF" Lock Washer

Two parts are handled as one . . . lock washers can't drop off. Every nut is locked tight by the powerful tapered-twisted locking teeth of a "SHAKEPROOF" Lock Washer.

INCREASE PRODUCTION AND CUT COSTS WITH KEPS. WRITE FOR FREE TESTING SAMPLES AND KEPS DATA BOOK TODAY!

SHAKEPROOF INC.
Division of Illinois Tool Works
2501 North Keeler Avenue, Chicago 39, Illinois

If you write maker identify as IEN - 5324

UNIVERSAL DRILL BUSHINGS

establish new standards of high quality

Universal Drill Bushings, produced at the big, modern plant of the Universal Engineering Company, have been first in industry for more than 25 years. They are accurately machined with superhoned bores from the finest quality steel and carefully inspected to insure maximum efficiency and extremely long life. Write today for complete information.

The modern home of finer production tools

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

156-A

If you write maker identify as IEN - 5325

A NEW SIZE!

43 H.P.

DODGE TORQUE-ARM *Speed Reducer*

Here is the new "big brother" of the famous Dodge Torque-Arm family. Double reduction—43 hp capacity—output speeds from 12 to 110 rpm. Rugged, dependable, economical. No special engineering required, no expensive installation. Drives through any V-belt drive—stock Taper-Lock sheaves prescribed for desired speeds. Backstop available if desired. Write for special Torque-Arm bulletin and information about new Dodge Tri-Matic Overload Release.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN - 5326

Sure..... **Stainless Pipe is Tough to Get**

But..... **Here is a way to double the amount of pipe a mill can make from its supply of alloys**

Light weight *Schedule 5* Stainless Pipe provides more feet of material from every pound of critical alloy. And *Schedule 5* pipe hooks up to existing lines of heavier pipe. The large inside diameter of *Schedule 5* pipe (standard pipe size O.D.) gives increased flow area. And the cost of this light weight Stainless Pipe is much lower than the cost of heavier pipe.

For the complete story about *Schedule 5* and the jobs it can do, return the coupon for a set of these Data Sheets.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

Please send me a set of the new Data Sheets describing light weight *Schedule 5* Stainless Pipe.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN-5327

Here's How STURTEVANT Air Separators Increase Production of Fines ...Lower Production Costs

Sturtevant Air Separators effect production savings by increasing output by 25 to 300% . . . reducing power consumption by as much as 50%.

They efficiently carry off all classified materials in any desired fineness from 40 to 325 mesh and finer . . . eliminate the need of screening in certain applications. Capacities available from ¼ to 50 tons per hr. *Write for full details, today.*

Sturtevant Mill Company
113 Clayton Street, Boston 22, Mass.

If you write maker identify as IEN-5328

WEBBER
TRADE MARK REGISTERED

INDUSTRIAL FREEZERS

For Shrink Fit·Stabilization of Metals·Hardening and Testing with Temperatures as low as -165°F.

Patents Pending.

36 STANDARD MODELS
. . . or built to your specifications at no additional cost
A FREEZER FOR EVERY NEED
Write for more complete information
Representatives in Most Cities

Used in many of the largest industrial plants, Webber Industrial Freezers are performing heavy-duty, dependable service with extreme accuracy at temperatures as low as -165°F. Lengthens life of valuable cutting tools, eliminates "heat-and-hydraulic press fit" methods by the use of shrink and press-fit methods, eliminates warpage and high rejection rate, common with other methods, saves cost of dry ice, amortizes itself in less than one year. Speed production—Save time—Save money with Webber Industrial Freezers.

INDUSTRIAL FREEZER DIVISION
WEBBER APPLIANCE CO., INC.
8-2740 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN-5329

QUICK and EFFICIENT in ACTION

Truscon Steel Boxes and Skids *keep things moving.* They are available in a wide variety of styles and sizes, for truck, crane or hand-operated carrying units.

Truscon Steel Boxes and Skid Platforms are strong at all parts where strength is needed. Units are designed to meet the particular requirements of each individual job. There is practically no maintenance or up-keep required.

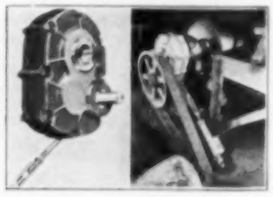
Truscon engineers offer to study the handling conditions in your plant and make recommendations without any obligation on your part. This service has been rendered to many manufacturers. Savings have, in many instances, more than offset the original cost of the equipment within a few months. Write for literature.

TRUSCON STEEL COMPANY • Pressed Steel Division
6200 Truscon Avenue, Cleveland 4, Ohio • Subsidiary of Republic Steel Corporation

If you write maker identify as IEN-5330

DRIVE . . Speed reducer mounts on driven shaft, to 43 horsepower

Source: DODGE MFG. CORP.
500 S. William St., Mishawaka, Ind.



"Floats" on driven shaft

No. 7 is a new double-reduction assembly of the company's speed reducer, previously described IEN-12416-50. It mounts directly on the shaft of a driven machine. Also, as in the previous design, it is anchored against turning by means of a turnbuckle or by the company's overload release, previously described IEN-2198-52. Either unit permits adjustment of belt tension and maintains this tension. The overload release frees the reducer to turn through an arc sufficient to loosen the belts in the event of overload so the drive is not operative.

The complete line now includes 11 sizes of reducer in two series for single and double reduction with capacities from 1 to 43 hp., output speed from 12 to 330 rpm. The new unit alone is available in a range of speeds from 12 to 110 rpm.

If you write maker identify as IEN-5331

DRILLING . . Upright machine, ½ in. in cast iron, 7½ in. throat

Source: WALKER-TURNER DIVISION
637 South Ave., Plainfield, N. J.

72 models

Four speeds, ranging from 600 to 5,000 rpm., are available by positioning a V-belt on step sheaves connecting the motor in this new 15-in. machine. Hand-feed spindle travel is 4¼ or 6 in. to specification. The latter includes a depth gage and micrometer-type depth stop. The complete line includes models for bench and floor mounting in single and multiple-spindle assemblies. The motor-control switch in each case is built into the head housing. The belt is protected by formed-steel guards. The spindle is equipped with a No. 6A Jacobs chuck or with a No. 1 Morse taper as specified.

If you write maker identify as IEN-5332

STEELS . . Slide calculator reads weight and pieces against dimensions of stainless sheet

Atlantic Polishing Mill
2602 W. Addison St., Chicago 18, Ill.

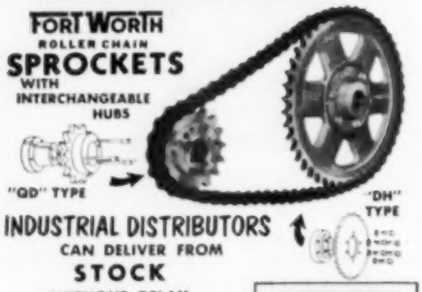
"Atlanticulator" is new vest-pocket slide rule to assist in computations on stainless-steel sheet. List price is 50 cents. Length and width of a sheet are set to correspond. Gage thickness is set under an arrow. Number of sheets then can be read under a scale of total weight in pounds. Reverse side presents information on theoretical weights to ⅜ in. thick.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5333

IMMEDIATE DELIVERY WITHOUT REBORING!

FORT WORTH ROLLER CHAIN SPROCKETS WITH INTERCHANGEABLE HUBS



INDUSTRIAL DISTRIBUTORS CAN DELIVER FROM STOCK WITHOUT DELAY FOR REBORING

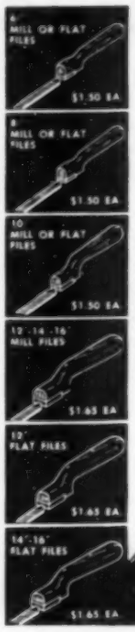
FORT WORTH Sprockets
Offer Many Advantages
- Actually Fits Shaft Better
- Reduces Cost of Spares
- Simplifies Changes
- Cuts Replacement Costs

HUBS ALSO FIT TRANSCO V-BELT SHEAVES

CATALOG 300-C
Shows list prices and dimensions of stock QD & DH sprockets. Chain dimensions and drive recommendations are in easy-to-use form.

FORT WORTH STEEL AND MACHINERY CO.
Dept. 25, 3600 McCart, Ft. Worth, Texas

If you write maker identify as IEN-5334



SAFETY FILE HANDLES by Remort

give lasting safety and surfacing clearance with no handle interference, making them ideal for die-makers—under and over handle gives complete visibility for lathe work. Files are securely held in a steel, dove-tailed V-block . . . just drive it on—knock it off to remove. Light in weight, wooden handle absorbs moisture and oil, assuring a firm grip. Designed for lasting performance. Sizes 6" to 16", for all Mill, Flat and Half-round files. Prices as shown.

PRODUCED TO A STANDARD OF QUALITY—NOT PRICE

OVER-TANG
Vertical Handle for Surfacing

For 12" to 16" Files
Sizes as Above Weight 6 Ounces

Write today to

Remort MANUFACTURING CO.
1310 Meyers Road, Lombard, Illinois

If you write maker identify as IEN-5335

ARE YOUR VALVES PERFORMING SATISFACTORILY IN SERVICES LIKE THESE?

CORROSIVE ACIDS, such as hydrofluoric, sulphuric and hydrochloric.

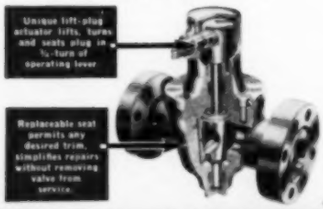
MOLTEN METALS—Temperatures to 1600° F.

VACUUM—Practically absolute.

HIGH WORKING PRESSURES—Up to 5000 pounds.

The remarkable Cameron Non-Lubricated Lift Plug Valve is handling these and many other difficult services with complete satisfaction. Combining the best features of gate and plug valves with a number of distinctive mechanical innovations (see cut), the Cameron Valve represents the first real advancement in valve design in many years. Low maintenance, ease of operation and pressure-tight closure without the aid of lubricants make this the outstanding industrial valve today. Literature gladly sent on request.

CAMERON IRON WORKS, INC.
P. O. Box 1212 Houston, Texas
Export: 74 Trinity Place, New York, N. Y.

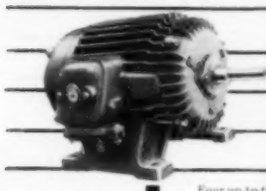


Cameron NON-LUBRICATED LIFT-PLUG VALVES

If you write maker identify as IEN - 5337

ACEC

Electric Motors are backed by



70 YEARS' DESIGNING AND ENGINEERING EXPERIENCE

NOW ON HAND
Integral Horsepower Electric Motors — conforming strictly to NEMA SPECIFICATIONS

FULLY GUARANTEED

MOTORS EXCEEDING 200 HP BUILT TO ORDER

Four up-to-the-minute plants producing the finest type electrical equipment, that is ACEC — Ateliers de Constructions Electriques de Charleroi, Belgium.

And world-famous ACEC motors are now *immediately available* to American customers from warehouse stocks in the United States.

In addition, a network of ACEC Distributors and Service Shops, from coast to coast, is prepared to handle customers' service needs promptly and efficiently.

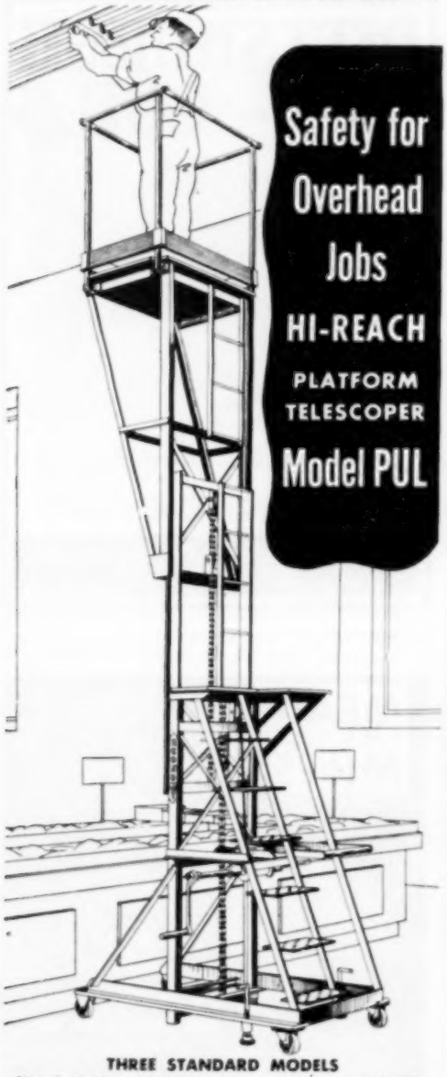
Whatever your motor requirements, write, wire, or telephone the nearest ACEC office or representative.

IMMEDIATE DELIVERY from NEW YORK • CHICAGO • KANSAS CITY NEW ORLEANS • DALLAS and LOS ANGELES Warehouses

BELGIAN ELECTRIC SALES CORPORATION
Main Office ONE E. 53RD ST., NEW YORK 22, N. Y. • PLAZA 8-3105

BRANCHES AND AGENCIES: Los Angeles • San Francisco • Chicago • Kansas City • Cleveland • Dallas • New Orleans • Pittsburgh • Louisville • Washington, D. C. • Youngstown • Savannah • Montreal • Puerto Rico • Mexico City

If you write maker identify as IEN - 5338



Safety for Overhead Jobs

HI-REACH PLATFORM TELESCOPER

Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

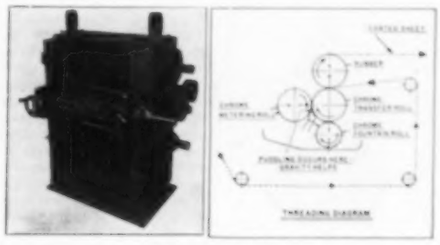
Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 5340

SPREADING . . Roller coating machine applies fluid to paper, film, fabric, foil

Source: DILTS MACHINE WORKS
44-48 N. 1st St., Fulton, N. Y.



Patents applied for

Contracoater is a new reverse-roll spreading or coating machine to apply lacquer, resin, plastisols, organisols in a range of viscosities and formulations to paper, foil, film, fabric. It is available in a range of widths to 80 in. measured across the material web. It features precision adjustment and threads the web through the machine so each step of the operation is in full view.

The fluid material is picked up by a fountain roll from a reservoir near the bottom of the machine. It is transferred to a center applicator roll, which rotates in opposite direction to a metering roll to carry the film to the web which threads in under a rubber-covered roll at the top of the machine and passes around this roll to issue from the machine on the side opposite to that at which it entered.

Edge doctors and dams under the applicator and metering rolls employ gravity to confine the fluid to any desired width. Air pressure brings the rolls into contact with the web and each other. A synchronous drive brings the rolls up to predetermined operating speed following the operation of making ready. Exclusion of trapped air that could cause bubbles is inherent in the design. Flow in the coating materials themselves will not affect control of thickness applied on the web.

If you write maker identify as IEN - 5341

COUNTING . . Multiple assembly of counters for sequence control

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.

Illustrated is a typical assembly of a number of the company's electric counters with which sequence control can be set up over a number of operations that are to occur in measured order one after the other. As each stage reaches a predetermined count, the unit governing that stage closes or opens a control circuit to initiate the next stage. At the completion of the last stage the complete assembly resets and comes to a stop or starts the cycle over again. The equipment is subject to specification for given requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 10

If you write maker identify as IEN - 5342

STANDOUT IDENTIFICATION
– at the right price!

METAL NAME PLATES by

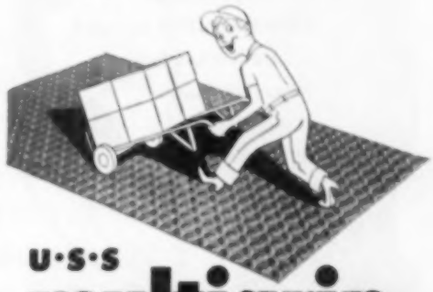
CHICAGO THRIFT-ETCHING CORPORATION

Spotlight your product with a sparkling metal name plate that reflects quality, lends distinction and assures permanent readability. Ask us to quote on name and instruction plates, dials, panels, etc. We also apply special finishes to aluminum products and parts including ANODIZING by the exclusive Alumilite process. Write today for information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1555 North Sheffield Ave., Chicago 22, Illinois, Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

If you write maker identify as IEN - 5343

"Where wheels must roll, use Multigrip
To give them better traction . . .
To make your floors and ramps skidproof,
Keep maintenance to a fraction."



U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL COMPANY, PITTSBURGH
COLUMBIA GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 2-195

UNITED STATES STEEL

If you write maker identify as IEN - 5344

GET RID OF WIRES and get foolproof connections in

- RADIOS
- AMPLIFIERS
- SWITCHBOARDS
- METERS

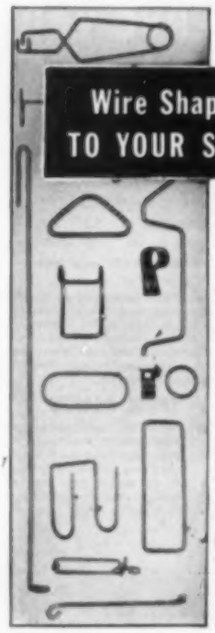
Print your circuits with Du Pont Conductive Coatings—reduce costs and time

Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

DU PONT ELECTROCHEMICALS

DU PONT

If you write maker identify as IEN - 5345



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
(Formerly HESCHKE Wire and Specialty Company)
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 5346

Yes, B&W Kaocast is versatile. This 3000F refractory castable speeds repairs . . . eliminates need for large inventory of special shapes. Discuss easy-to-use Kaocast with your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
85 LIBERTY ST., NEW YORK, N. Y.
WORKS: AUGUSTA, GEORGIA

If you write maker identify as IEN - 5347

If you really want to cut stitching costs . . .

THIS 30-DAY FREE TRIAL OFFER WILL SHOW YOU HOW!

WE WILL GIVE YOU —
one, two or even twenty New Inland All-Metal Lifetime Automatic Wire Spools for 25 lb. coils — for 30 days without obligation.

TO USE —
with Inland Speed-Flo Wire on your stitching machines — your work — under your operating conditions. There will be no cost or rental on the spool.

THIS REMARKABLE SPOOL —
will use every inch of wire on the spool — eliminate wire trouble — and give you improved stitching with a saving in time and wire.

DON'T DELAY —
This 30-day offer is limited by the number of spools now on hand. Request full particulars today!

INLAND WIRE PRODUCTS CO.
3963 SOUTH LOWE AVENUE CHICAGO 9, ILLINOIS

If you write maker identify as IEN - 5348

CAN WE SERVE YOU

We make PRECISION PAPER PRODUCTS *at a saving to Industry*

CONE SHAPES
- SIZES: 1" to 30" lengths
- TAPERS: 45° to 44°
- TOPS: Straight round open—closed
- FINISHES: Smooth rough ground—flocked

Cones may be impregnated for strength, toughness and waterproofed. They can also be perforated, printed, colored, lacquer tipped, scored, covered with novelty wraps and made with inside liners of cellulose, plastic, glassine paper. We make cone shaped containers.

SPOOL SHAPES

Paper spools are made any normal size and with varied constructions to include tinsted fibre heads, various size barrels in length and diameter, with wooden, paper and metal bushings. Single head spools with tapered or flat molded paper base.

Our complete laboratory and engineering service will consider any problem

SONOCO PRODUCTS COMPANY
HARTSVILLE, S. C. HARTFORD, CONN.

If you write maker identify as IEN - 5349

LIGHTING . . Incandescent fixture, explosion proof, 60 to 500 watts

Source: APPLETON ELECTRIC CO.
1713 Wellington Ave., Chicago 13, Ill.

Detaches to clean

Series AA-51 is a new design of explosion-proof lighting fixture that provides for quick exchange with clean freshly-lamped fixture units for those taken down so actual relamping and cleaning can be handled at a work bench in a safe location. Any arc is safely confined in the event that current is "on" when the fixture is removed by five full threads on the canopy. They are engaged whenever contact is made or broken. Sizes range from 60 to 500 watts. The fixture is listed by Underwriters' Laboratories, Inc., for Class 1, Groups C and D hazardous locations.

The assembly includes a standard canopy 1, a connection block with spring-leaf contacts 2, release lugs 3 for fixture removal, a shock-absorbing socket 4, a porous-metal interior 5, notches 6 for screw driver leverage to release the globe ring, a heat and impact-resistant glass globe 7, and the detachable reflector 8. Canopies are standardized to take any fixture in the line without rewiring.

If you write maker identify as IEN - 5350

CONTROL . . Electronic pyrometer anticipates variation from set point

Source: WHEELCO INSTRUMENTS CO.
845-9 W. Harrison St., Chicago 7, Ill.

Has zero adjustment

Model 293 is a new assembly in the company's Capacitrol line of indicating pyrometer control instruments for application on ovens, furnaces, kilns, molding machines. Feature of the new design is the Line-otrol mechanism which acts to minimize the "on" and "off" variation above and below the preset control point to compensate for temperature lag and prevent hunting. Assembly is in a housing that measures about 7½ by 8 by 8 in. for flush or surface mounting on original equipment or on an instrument panel.

If you write maker identify as IEN - 5351

RESEARCH . . Sound film tells story on how chemical research is initiated and carried out

E. I. du Pont de Nemours & Co.
2518 Nemours Bldg., Wilmington 98, Del.

"A Story of Research" titles new 16-mm. color sound film which describes how chemical research works and what it does. It shows types of research, purposes, methods, teamwork, results and how they affect living standards. The film is available on loan. Showing time is 20 minutes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5352

WATSON-STILLMAN
HYDRAULIC POWER TOOLS FOR INDUSTRY

HYDRAULIC JACKS
These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

WIRE ROPE SHEARS
W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

PORTABLE PIPE BENDERS
Bends standard, extra heavy and double extra heavy steel pipe from ⅛ in. to 2 in., as well as standard weight pipe up to 3 in. dia. Also solid mild steel bars up to 2 in. dia.

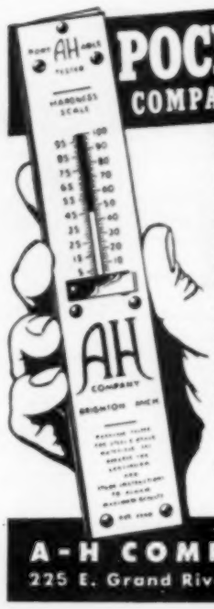
HAND PUMPS
Single and double plunger types, with reservoirs of different capacities for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

Send for your copy of Bulletin A-5 . . . It's Free.

DISTRIBUTOR PRODUCTS DIVISION
WATSON-STILLMAN
ROSELLE, NEW JERSEY

If you write maker identify as IEN - 5353

POCKET-SIZE COMPARATOR TESTER



A compact, low cost precision tester which will fill a dozen needs in your plant.
Easily carried anywhere and used on-the-job by anyone.
Gives accurate surface elasticity readings, easily converted to Rockwell or Brinnell.
Hundreds in daily use in all types of industry. A trial tester will prove its value.

PRICE $25.50 Plus Tax Including case
F. O. B. BRIGHTON, MICH.

A-H COMPANY, INC.
225 E. Grand River, Brighton, Mich.

If you write maker identify as IEN - 5354

PITTSBURGH air pressure tested COILS

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Bends, Boiler Tubes. "Let us quote!"

Pittsburgh Pipe Coil & Bending Company
Division of Enameled Metals Company
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA.

If you write maker identify as IEN - 5355

MEAD IMPACT MILLS
SINCE 1877

PULVERIZE
GRINDABLE AND UNGRINDABLE MATERIALS

FAST CONTINUOUS PRODUCTION
QUIET
LOW MAINTENANCE
5 VERSATILE MODELS
WIDE RANGE of MATERIAL & PARTICLE SIZES
HIGH SPEED IMPACT

WET or DRY SAMPLES of YOUR MATERIAL TEST RUN *at no charge.*

PATENT PENDING
COMPLETE ENGINEERING AND INSTALLATION AVAILABLE
Write for literature . . .
MEAD MILL COMPANY
14620 EAST SEVEN MILE ROAD
DETROIT 5, MICHIGAN • DREXEL 1-0200

If you write maker identify as IEN - 5356

Anticipate* Destruction

Amp-trap PREVENTS DEVELOPMENT OF HEAVY SHORT CIRCUIT CURRENTS

* To preclude or prevent by prior action — Webster

SHAWMUT Amp-trap

Amp-trap installation at Bird & Son, E. Walpole, Mass., raised the interrupting capacity of the system from 20,000 amperes to 100,000 amperes R.M.S. at 600 Volts, 60 Cycles.

NEW, LOW-COST SHORT CIRCUIT PROTECTION

Amp-trap, with its 100,000 RMS interrupting capacity opens the circuit so fast that it precludes the development of peak available short circuit current. Consequently, it prevents both magnetic and thermal destruction. Even phase-to-ground faults are cleared so quickly that multi-conductor faults are usually avoided.

CERTIFIED AND APPROVED

Listed by Underwriters Labs. Interrupting tests up to 202,000 amps @ 500V 60 Cycles witnessed and certified by Electrical Testing Laboratories, Inc.

FOR SYSTEMS OLD OR NEW

Amp-trap is supplied in all standard ratings up to 4000 Amps for use on circuits up to 600 volts AC or DC. It can be installed with minimum structural rearrangement.

"You Can Get Amp-traps"

WRITE FOR FREE AMP-TRAP BULLETIN TODAY.

AMP-TRAPS — *Hands At The Switch*

THE CHASE-SHAWMUT CO.
386 Merrimac Street • Newburyport, Massachusetts

If you write maker identify as IEN - 5357

"Lightnin" Mixers"

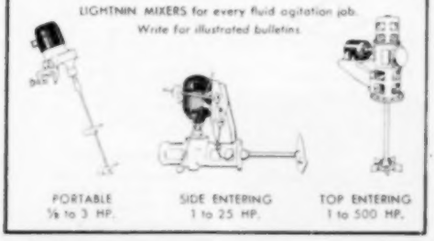
CLEAN—DEGREASE SMALL PARTS IN 5 MINUTES!

Cleaning small parts in a LIGHTNIN-agitated solvent bath is 50% faster than ordinary dipping. Grease, loose chips and dirt are washed away in five minutes, on the average. The LIGHTNIN Mixer gives fast, thorough turnover of solvent, violently agitating every part of the bath for even, uniform cleaning. Hand scraping and scrubbing are eliminated.

LIGHTNIN Mixers speed up the cleaning action of any commercial solvent. They are easily installed in any cleaning tank. The mixer is supplied as a packaged unit, ready to install and run. Every LIGHTNIN Mixer is guaranteed to do the job for which it is recommended.

For correct size and full details, send us dimensions of your cleaning tank, type of solvent used, and number, size and shape of parts to be cleaned at one time.

LIGHTNIN MIXERS for every fluid agitation job.
Write for illustrated bulletins.



MIXCO® fluid agitation specialists

MIXING EQUIPMENT Co., Inc.
124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto

If you write maker identify as IEN - 5359

DRILLING . . Upright machine ¾ in. in cast iron, 9 in. throat

Source: DURO METAL PRODUCTS CO.
2679-83 N. Kildare Ave., Chicago 39, Ill.

About $240 less motor

Feed is by hand or a spring-backed foot pedal on this new Type C-3088 18-in. drilling machine. Feed travel is through 5 in. with maximum distance, base to spindle, measuring 44½ in. and table to spindle measuring 20 inches. Head and table mount on a 3½-in. column secured in a base measuring 18 by 28 inches. The table is tilting design with provision to lock at a desired angle. Its working surface measures 14 by 18 inches.

The spindle is made of alloy steel with ground finish. It is mounted on sealed permanently-lubricated ball bearings. Drive is by V-belt connection to an adjustably mounted vertical motor at the rear. Provision for adjustable feed tension and an adjustable depth stop complete the assembly of the new machine.

If you write maker identify as IEN - 5360

PAINTING . . Aluminum paste for bright finish on metal products

Source: ALUMINUM CO. OF AMERICA.
670 Gulf Bldg., Dept. 22, Pittsburgh 19, Pa.

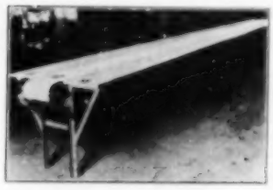
For vehicles, appliances

Tinting Paste No. 222 is a new iridescent material for use in polychrome or metallic finishes. It results in a clean appearance of considerable depth in the finished coat. The iridescent effect is not subject to "seeding". Metal content of the paste is 65 per cent. Specific gravity is 1.47. Weight per solid gallon is 12.2 lb., bulking value 0.082 gal. per pound.

If you write maker identify as IEN - 5361

CONVEYING . . Table mounted belt for assembly, inspection, packaging

Source: FLEXOID CONVEYOR CO.
1545 E. 23rd St., Cleveland 14, Ohio



Any length, width, height

Table Conveyor is a new assembly of 12-in. belt in a table with leaves 15 in. in width on each side. Length is to specification. The belt can be made of neoprene, stitched or woven canvas, rubber. The table is available in maple, Masonite or metal. Drive is by a motor and variable-speed transmission for operating rate between 20 and 40 feet per minute. The assembly is mounted on adjustable legs so it can be set at a required height.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

If you write maker identify as IEN - 5362

25 YEARS OF LEADERSHIP IN FASTENINGS OF STAINLESS STEEL

To YOU, Anti-Corrosive's 25th Anniversary is an assurance that the oldest, largest and best known firm dealing exclusively in stainless steel fastenings is best suited to serve your needs in this field.

Still Plenty of Fastenings IN STOCK

For quick delivery of stainless steel fastenings, check Anti-Corrosive first, since there are many stock items and alternates on hand!

FREE - A - N Fastening Selector !

Write for Slide Chart No. 52T — instantly identifies A-N Nos. pertaining to stainless fastenings, gives sizes, other data. Catalog available.

Anti-Corrosive Metal Products Co., Inc. 1927 – 1952

Manufacturers of STAINLESS STEEL FASTENINGS

CASTLETON ON HUDSON NEW YORK

If you write maker identify as IEN - 5363

FOR SALE:

1 Assembly Press
1 Die-Cast Trimmer
1 Punch Press
1 Crimping Press
1 Testing Machine
1 Die-Stamping Unit
1 Staking Press
1 Swager
1 Deep-Draw Press
1 Blanking Unit

You get ALL 10 - and more - in one "MULTIPRESS"

—for Multipress is tops in versatility. Its speedy, accurate, oil-smooth efficiency and *power control* adapt quickly to dozens of precision jobs when properly tooled. One to 50-ton sizes and capacities; Index Table Feeds and other standard accessories for special jobs. Write today for full details.

DENISON Hydr-Oil-ics

The DENISON Engineering Co.
1158 Dublin Rd., Columbus 16, O.

If you write maker identify as IEN - 5364

● Cords, Ltd. engineers and builds standard and special cord sets for any application. Proved dependability.

Most comprehensive stock of moulds and dies in existence for production of electronic cords and assemblies.

When you bring your cord problems to us you get the experience of the vast Essex Wire organization, plus integrated production of every component from wire bar to finished assembly. Write for details, explaining application.

WIRE SX PRODUCTS

CORDS LTD.
DIVISION ESSEX WIRE CORPORATION
121 DODGE STREET, DEKALB, ILLINOIS

If you write maker identify as IEN - 5365

an ACCO product

Army Type WRIGHT SAFEWAY

A steel hand hoist with compact, adjustable suspension and trolley to fit various width I-beams. Designed for low overhead. Easily converted to 2-wheel geared trolley unit. Long-life features mean low-cost service.

See your WRIGHT Hoist distributor or write for Bulletin DM-269 today.

2-wheel GEARED TROLLEY ASSEMBLY

WRIGHT Hoists Trolleys Cranes

ACCO
WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

If you write maker identify as IEN - 5366

SPRAY NOZZLES... two guides to proper selection!

No matter what you may face in the way of a spraying problem, it can be solved quickly and at low cost with Spraying Systems Spray Nozzles. Two fact-packed catalogs—No. 22, General Industrial Spray Nozzles, and No. 23, Pneumatic Atomizing Nozzles—are yours for the asking. They show you all the various types of spray nozzles available . . . explain design and construction . . . and outline spray characteristics such as atomization, impact of spray and capacity. Write for your copies today.

SPRAYING SYSTEMS CO.
ENGINEERS AND MANUFACTURERS
1208 RANDOLPH STREET · BELLWOOD, ILLINOIS

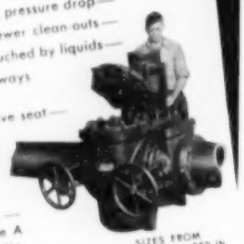
WRITE FOR CATALOGS NO. 22 AND NO. 23

If you write maker identify as IEN - 5367

ELLIOTT TWIN STRAINERS Type "A"

Everything you want in a non-stop strainer . . .

- One cylinder works while other is cleaned—
- Streamlined to cut pressure drop—
- Big baskets for fewer clean-outs—
- Valve screw untouched by liquids—
- Valve position always apparent—
- Self-cleaning valve seat—
- Wear plates available if required—



Get all the story—write for the Type A Twin Strainer Bulletin.

SIZES FROM 1" UP—125 to 250 lb. PRESSURES

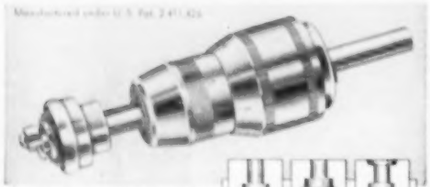
A2-3

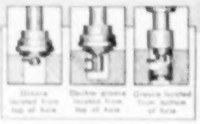
ELLIOTT COMPANY
Accessories Dept., JEANNETTE, PA.
DISTRICT OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 5368

Waldes Truarc Internal Grooving Tool
for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!

Manufactured under U. S. Pat. 2,411,426





Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate . . . readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine, assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling . . . resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes . . . extra features

WALDES **TRUARC** GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

If you write maker identify as IEN - 5369

RUBBER . . Molded shapes bonded to metal or to ceramics

Source: ANDREWS-ALDERFER CO.
1079 Home Ave., Akron 10, Ohio

User specifies requirements

The company announces a new contract service in which it is prepared to supply custom-fabricated parts consisting of molded rubber shapes bonded to any ferrous or non-ferrous metal component or to various ceramic pieces. Typical application examples of the finished bonded units include control valves, electric control devices, conveyor parts, heat treating equipment, electric switches, contacts, controllers.

The rubber employed in the molding operation can be natural or reclaimed stock or synthetics such as Buna S, Buna N, Neoprene, butyl, Thiokol. Tensile strength ranges from 500 to 3,500 lb. per square inch. Durometer hardness is from 30 to 100. Elongation can range from 50 to 900 per cent. The rubber can be supplied to remain stable under temperatures from minus 75 to plus 200 deg. F.

If you write maker identify as IEN - 5370

MILLING . . Die sinking cutters, range of sizes and shapes from stock

Source: METAL REMOVAL CO.
1544-48 N. Orleans St., Chicago 10, Ill.

Ask for Catalog 23

High-speed tool steel is employed in manufacture of a new collection of end mills and die-sinking cutters in single and double-end design with 2, 3 or 4 flutes, straight or spiral, and with straight or ball ends. Diameters range from 1/16 to 2 inches. List prices are $2 to $17. All are shown in a new 6-page catalog with size tabulations and prices for each with quantity discounts.

If you write maker identify as IEN - 5371

STEEL . . Materials required to make it described as to function, sources, quantities

United States Steel Co.
69-73 Broadway, New York 6, N. Y.

Review of the current situation on steel production with a minimum of statistics is presented in new 40-page booklet, "Materials for the Production of Steel." Author is R. E. Zimmerman, Chairman of the company's Research Policy Committee. It deals with iron ore, coke, limestone, refractories, fuels and alloying ingredients such as manganese, tungsten.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5372

What's in a Name? PLENTY!... IF THE NAME IS Prep-n-Cote

The Outstanding PHOSPHATE COATING PRODUCT for Iron, Steel and Aluminum

Phosphate coating is an accepted procedure for preparing metals for enduring paint protection, and Prep-n-Cote represents the finest product for this purpose . . . Phosphate coat and chemically condition metal . . . Reduce phosphatizing and attendant maintenance cost . . . Eliminate sludge and scale from processing . . . provide a metal conditioning and phosphate coating process for all manufacturers regardless of their available equipment. Prep-n-Cote is economical to use.

WRITE FOR BULLETIN 48-91.

NEILSON CHEMICAL CO.
2682 Tecumseh Rd., Windsor, Ont. · 8244 BENSON ST., DETROIT 7, MICH. · 2411 Union Pacific Ave., Los Angeles 33, Calif.

If you write maker identify as IEN - 5373

SIMPLICITY!

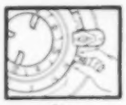
Low Upkeep Cost
Trouble-Free

BEAVER NO. 26-R
1 TO 2-INCH PIPE THREADER

Right or left hand models

5 OUTSTANDING ADVANTAGES

Radio Dial Setting Change in 2 Seconds



Dies Easily Removed from Outside

• The new Beaver 26-R is a greatly improved and simplified successor to the "old Beaver 26," popular for 40 years. Drive ring is on top—in line with dies for easy cutting. Oversize, undersize or standard threads can be cut of uniform length. Has "radio dial" setting. Change size in 2 seconds without tools. Standard taper or electric conduit threads. One set dies. No bushings.

BEAVER PIPE TOOLS, INC.
262-300 DANA AVE. • WARREN, OHIO, U.S.A.
"Over 50 Years of Friendly Service"

Straight Line Pull Easier Cutting

Universal Chuck - Accurate Centering - No Bushings

Cuts Taper or Straight Threads

If you write maker identify as IEN - 5374

SEE THIS NEW WAY TO SAVE LIVES AND PROPERTY FROM FIRE

NEW ELECTRONIC DETECTOR SPOTS THE FIRE BEFORE IT REALLY GETS STARTED, PROVIDES LOW-COST 24-HR. PROTECTION

It's speed that counts in stopping fires. Here is a new means of fire detection that doesn't wait until the flames start, doesn't wait for heat to build up. The American Electronic Sentry detects the first wisp of smoke that crosses the light beam, flashes an alarm even before sprinkler heads go into action! Nothing like it for warehouses, barracks, hospitals, defense plants.

IT'S SIMPLE, IT'S INEXPENSIVE

Essentially, The American Electronic Sentry System consists of a Light-Beam Projector, a photo-electric Sensor, and an Annunciator Panel. Projectors and Sensors are used in pairs. One pair can "watch" an area of about 150 ft. x 30 ft.—can detect even a puff of cigarette smoke.

The Annunciator Panel may be located nearby, or up to 2 miles away, connected by inexpensive wiring.

Current consumption is low—only about 50 watts per unit. Any type of signalling device—horn, bell, siren, or light may be used for additional alarms.

FM Approved by Factory Mutual Laboratories

ANNUNCIATOR

PROTECTED AGAINST FAILURE

The Projector has a built-in supervisory circuit to warn of failures. Voltage variations are corrected so operation is stable. Interruptions by sabotage, accident or power failure set off an alarm.

WRITE FOR FULL DETAILS

Full information on The American Electronic Sentry may be obtained promptly and without obligation by writing to . . .

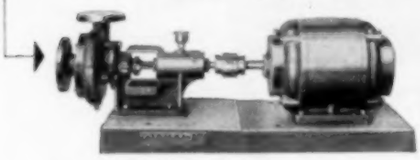
ELECTRONICS DIVISION
AMERICAN ENCAUSTIC TILING CO., INC.
903 Kenilworth Ave., Lansdale, Pennsylvania

If you write maker identify as IEN-5376

FOR PROCESS AND MEDIUM DUTY CHEMICAL SERVICE

dependability and economy are assured

with this Warren-Quimby Type "G" Pump



This Warren-Quimby Pump is designed to give both dependable and thoroughly economical satisfaction in process industries and chemical plants having semi-critical requirements. It has proven its merit conclusively whenever correctly applied.

Simplicity of design, sturdy bearings, extra deep stuffing box, tapped catchall, together with strong construction throughout the entire rigid assembly, all contribute to long, useful life at moderate cost.

It is available in 1, 1¼, 1½, 2 and 3 inch discharge sizes. Capacities up to 400 GPM—heads up to 240 feet.

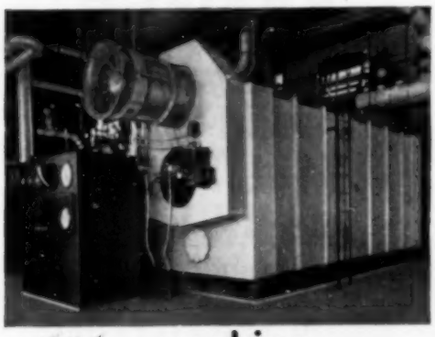
SEND FOR BULLETIN WQ-213 giving Specifications, Selection Chart, etc.

IEN-6

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

If you write maker identify as IEN-5377



making FRIENDS fast

The B&W Integral-Furnace Boiler, Type FM

SHOP ASSEMBLED FOR SAVINGS

All the benefits of "packaged" steam are combined with the traditional economies and big boiler advantages of B&W's Integral-Furnace design in this compact, shop-assembled, ready-to-use unit. You can set it down wherever you want it, and set it up—ready to operate—in jig-time.

Already, well over 100 users in 24 broad industrial and commercial classifications in 29 states, two territories and 6 foreign countries have selected the B&W Integral-Furnace Boiler, Type FM, to produce a total 4,200,000 lb per hour of low-cost steam. Many of these users have placed repeat orders.

This popular self-contained unit is available for efficient heating and process steam-generation from 2900 to 28,000 lb per hr. at pressures to 250 psi. It's worth investigating.

- Saves Erection Time and Cost
- Meets Wide Range of Service
- Handles Quick Load Changes
- Fast Steaming
- Low Maintenance
- Easy Accessibility
- Suitable for Outdoor Service
- Burns Oil and/or Gas
- Saves Fuel
- Saves Space
- Safe, Automatic Operation

Send for bulletin G-76 detailing advantages of this latest B&W creation in low-cost steam generation. The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N. Y.

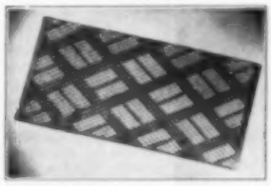
BABCOCK & WILCOX

G-560

If you write maker identify as IEN-5379

FLOORS . . Vinyl-plastic link mat assembled on wire or on vinyl tubes

Source: AMERICAN MAT CORP.
1711 Adams St., Toledo 2, Ohio



Highly resistant to wear

Plastic links making up this new Ever-Tred mat are made in five colors, green, red, brown, black, white. Each link is corrugated on its top and bottom faces for a slip-resistant walking surface and for good footing on a floor. The links are assembled on rust-resistant steel wire or on flexible vinyl tubing in specified pattern combinations. Dimensions are to 6 ft. in width and any specified length. Thickness is ⅜ inch. Nose pieces and side strips complete the assembly.

If you write maker identify as IEN-5380

PLATING . . Contract service to nickel plate parts made of aluminum

Source: BART LABORATORIES CO.
225-29 Main St., Belleville 9, N. J.

Send small sample to be plated

New process has been developed by the company in which a bonding material is sprayed on aluminum parts to a required thickness and the piece is then plated with nickel by conventional means. It is available on a contract basis to plate aluminum parts for surface finish and for protection against corrosion and erosion. The process was developed initially to protect duralumin aircraft propeller blades against the pitting and eroding effects of spray thrown up in sea landings and take-offs of amphibious aircraft. It is available now for application on parts for other purposes in which unplated aluminum is subject to attack.

If you write maker identify as IEN-5381

PROTECTING . . Plastic coated glove is flexible, oil, alkali, acid proof

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

12 pair per carton

Plastik-Plated is a new canvas glove coated with a tough abrasion-resistant flexible vinyl plastic. The glove wears like leather. It sheds moisture and resists attack by chemicals, particularly strong acid concentrations. It will not become tacky at elevated temperatures.

Several designs include complete coating or ventilated palm-coated design with smooth or rough finish. Knit, safety cuff or gauntlet can be specified. The knit wrist design is in sizes for men and women.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5382

KENNAMETAL *Carbide* TOOLING

For the EXTREMES...

and EVERYTHING in Between...

GREATER PRODUCTIVITY!

Sturdy, long-wearing Kennametal tools enable men and machines to do more, in less time, at less cost. We have hundreds of performance reports to prove it—describing a wide variety of jobs on different types of materials. On many of these jobs Kennametal tooling pays for itself in savings effected in grinding, alone—not counting reduced tooling costs, and higher production rates attained. Let us demonstrate.

KENNAMETAL Inc.
Latrobe, Pa.

If you write maker identify as IEN-5383

CASTELL PUSH BUTTON LOCKTITE

the perfectly balanced holder
(black or colored)

An indispensable drawing tool for professional men everywhere — because LOCKTITE holds lead in bulldog grip, prevents it sliding back into holder. Reduces smearing and smudging, because your fingers never touch the graphite, except when refilling. Order from your Dealer today.

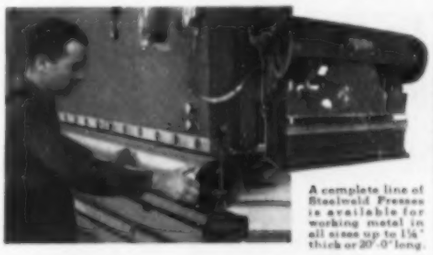
No. 9030
CASTELL Refill IMPORTED
Master Degree Leads
7H to 9H

Reproduces more clean, sharp blueprints than any other lead.

The same wonderful imported leads that you get in the CASTELL wood pencil. Usable in all standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

CASTELL the drawing pencil with the Master Degree

If you write maker identify as IEN-5384



A complete line of Steelweld Presses is available for working metal in all sizes up to 1¼" thick or 20'-0" long.

TUBES— Round, Square, Hexagon
MADE WITH BENDING PRESSES

Small diameter cylinders, square and hexagon tubing, and other closed shapes are easily made with simple dies on Steelweld Presses. The same machines are used for standard bending work, multiple punching, corrugating and various forming operations.

Because Steelwelds are such all around useful tools, we urge you to check on their many possibilities for serving your plant profitably.

STEELWELD BENDING PRESSES CATALOG No. 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4243 East 281st St., Wickliffe, O.

STEELWELD PRESSES

If you write maker identify as IEN-5385

Many MANUFACTURING PLANTS *Use* HYSTER® 20 Lift Trucks

MATERIALS HANDLING SUPERVISORS like the Hyster 20 because it transports fast, stacks high, gets in and out of tight places, rolls on pneumatic tires, is rugged and powerful.

OPERATORS like it because Hyster steers easily, carries and lifts loads smoothly, takes indoor and outdoor jobs in stride.

MANAGEMENT likes it because Hyster slashes manufacturing and warehousing overhead and adds to net profits.

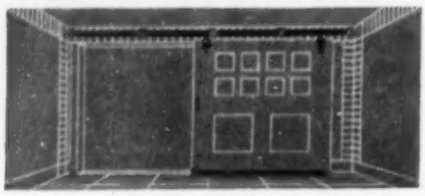
See your Hyster dealer for an eye-opening demonstration and a list of owners. Or write for literature.

HYSTER COMPANY
Three Factories
2916 N. E. Clackamas, Portland, 8, Ore.
1016 North Adams St., Peoria 1, Illinois
1016 Mayers Street, Danville, Illinois

If you write maker identify as IEN - 5386

COBURN

SLIDING DOOR HARDWARE



. . . LOW INSTALLATION COST
. . . SMOOTH, EASY OPERATION
. . . LONG, TROUBLE-FREE LIFE
. . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION CF&I

If you write maker identify as IEN - 5387

Air Motor and Arbor Stand Make Light Duty Air Press

A SIMPLE, inexpensive arbor stand, combined with any one of four Bellows Air Motors, makes a compact, versatile, bench air press . . . suitable for regular production work or emergency use. Does the work of expensive standard air presses. Throat clearance 5". Table 6" x 9". Ram clearance 6". Arbor Stand can be bought separately or equipped with any one of four different sizes of Bellows Air Motors.

Write for Bulletin MS-5 today. Address: The Bellows Co., Dept. IEN552, Akron 9, Ohio.

The Bellows Co.
AKRON 9, OHIO

If you write maker identify as IEN - 5388

What do you do when you don't have the right size v-belt in stock?

1. Contact your supplier for a replacement . . . wait for delivery and watch production stay at zero.
2. Send someone to get the required belt . . . pay your employee while he goes for the belt and pay through loss of production.
3. Stock VEELOS . . . and always have the right size v-belt when you need it because any length can be made up from a 100-foot reel. Inventory is automatically maintained. Available from distributors.

Get the facts on Veelos—the v-belt that keeps production up and holds inventory costs down—write for your VEELOS DATA BOOK which includes construction, installation and use details.

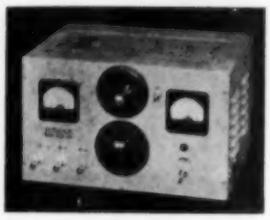
VEELOS V-BELT

MANHEIM MANUFACTURING & BELTING CO.
851 Menkel Street, Manheim, Pa.
Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 5389

RECTIFYING . . Selenium equipment for small scale plating operations

Source: R. O. HULL & CO.
1307 Parsons Court, Rocky River 16, Ohio



For continuous duty

Rohco Comet designates a new assembly of selenium rectifier with meters and control to provide dc. to plate chromium, bright nickel, cadmium, brass, copper, zinc in small-scale production. Operation is on 110-volt 60-cycle single-phase ac. with output adjustable to a maximum of 6 amp. in a range to 18 volts and 30 amp. in a range to 15 volt.

Current is read on a dual-range meter with a scale maximum at 6 and 30 amperes. The voltmeter is a single-range instrument maximum at 20 volts. Assembly includes an interval timer that can be switched in or out of the circuit. Dual outlets provide connections for 110-volt accessories.

If you write maker identify as IEN - 5390

PAINTING . . Spray booth, self-contained, for small work

Source: M & E MFG. CO.
2577 Winthrop Ave., Indianapolis 5, Ind.

About $333

Work positions on a 10-in. turntable in this new sheet-metal booth. It assembles all of the required equipment in its self-contained assembly for spray-finishing operation. Equipment includes a 2-gal. pressure paint tank, an oil and water extractor, a spray gun with hose and connections, a vapor-proof light to illuminate the booth interior, a fire-deflector curtain, a motor-driven exhaust unit for which the user supplies the motor, a galvanized weather canopy and damper, a 30-in. section of clean-out door and two 30-in. lengths of pipe to carry fumes away. Designation is Model DH-30. The equipment is ready for standard spray-painting operation as supplied.

If you write maker identify as IEN - 5391

WELDING . . Maintenance manual on stud welding equipment lists troubles and remedies

KSM Products Inc.
6510-14 Park Ave., Merchantville 8, N. J.

Schematic diagram at the start of new 12-page "Stud Welding Maintenance Manual" shows correct electrical connection between a stud welding gun, the work to be welded, control unit and the generator furnishing power. A second diagram shows operating sequence in making a stud weld. Instructions are given on maintaining the gun and the control unit, together with a list of common troubles and correction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5392

PORTABLE ELECTRIC OVENS...

Standard Models For Every Special Need!

Model CR-1
10 cu. ft. capacity—30" wide x 35" deep x 24" high. Removable shelves and drip pan $79.50
f.o.b. Chicago

Portable. Costs less than 5c per hour to operate. Adjustable temperature control to 225° F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required.

Can be used in a group or bank. Use them on the production line—save handling—hauling.

Other standard models with temperature ranges to 1000°F. available. Write for literature.

GRIEVE-HENDRY CO., INC.
1634 W. MADDON STREET CHICAGO 22, ILL.

If you write maker identify as IEN - 5393

NO OTHER OIL HYDRAULICS PERFORM LIKE "COMMERCIAL" OIL HYDRAULICS

Operating pressures recommended up to 1500 p.s.i.

CATALOG H-6 AVAILABLE ON REQUEST

THE COMMERCIAL SHEARING AND STAMPING CO.
YOUNGSTOWN 1, OHIO

"COMMERCIAL"

If you write maker identify as IEN - 5394

MEET JAN-I-225, 16E4 (Ships) and MIL-I-6181 Specifications for Radio Interference Suppression!

ACE SCREEN ROOMS

Pre-built

Features

1. Attenuation of 100 DB and higher from 0.15 to 10,000 MC.
2. Prebuilt, immediate installation, easy to relocate or to enlarge.
3. Standard and special types and sizes to meet practically any requirement.
4. Special filter entry and door construction.
5. Special service entrance for gas, air, water, etc., when required.

Write, wire or 'phone for details

ACE ENGINEERING and MACHINE CO., Inc.
3644 N. Lawrence St., Philadelphia 40, Pa.
Telephone: REgent 9-1019

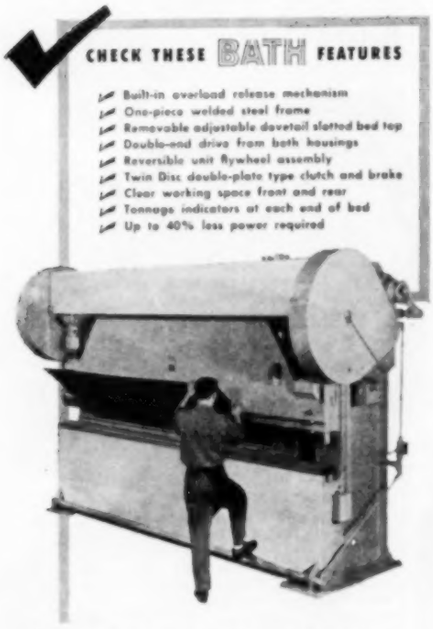
If you write maker identify as IEN - 5396

THE new Skinner X5 Solenoid Valve is basically the same as the widely accepted and tested V5, but modified to a construction that is Underwriters' approved for Class I, Group D hazardous locations. Small size and lightweight features are retained, and the X5 is low in price because of the many parts which are interchangeable with other Skinner valves. Rating is 10 watts max.; soft, spring loaded seals prevent leakage; internal parts are stainless steel, wide variety of port locations in ¼" and ¼" size; most types available for metering; for AC or DC in a wide range of voltages and frequencies; can be mounted in any position; supplied as two-way normally open or closed, three-way normally open, closed or directional flow. *Write today for details!*

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

If you write maker identify as IEN - 5397

How many Features can a Press Brake have!..



These are but a few of the 21 outstanding features you get in every BATH power press brake ...the features that assure continuous trouble-free production. Superior construction of BATH presses results in long service life, maximum safety for both operator and machine, minimum maintenance and quick installation. Patented release mechanism, which immediately disengages flywheel when excessive load is imposed, is one reason why BATH presses are noted as safe, dependable production tools.

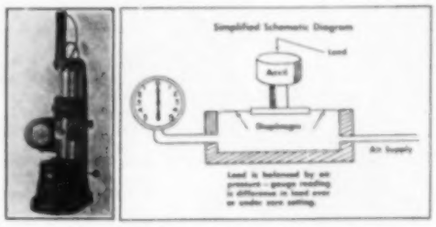
Write today for illustrated 28-page Catalogue No. S-1002 for complete information.

THE CYRIL BATH COMPANY
6985 Machinery Avenue • Cleveland 3, Ohio

If you write maker identify as IEN - 5399

TESTING . . Pneumatic machine for springs, piston rings, rubber

Source: LINK ENGINEERING CO.
13843 Elmira Ave., Detroit 27, Mich.



One variable to read

Load rating in actual pounds or on an over-and-under gage is all that is required to test a spring or a sample of resilient material against a predetermined setting made with a standard sample in this new machine. Load is established by air pressure passing through a regulator into a chamber beneath the machine anvil which rests on a diaphragm forming the cover portion of the chamber. The pressure gage is connected under the diaphragm. The machine employs air pressure in a vertical cylinder also to compress the work for high-speed production-line application.

Set-up is made initially, as in testing a 50-lb. spring, by putting a 50-lb. weight on the anvil and adjusting the air pressure regulator until the gage reads zero with an over-and-under unit or 50 lb. with a direct-reading assembly. A sample spring of known satisfactory characteristics is then put in the place of the weight and the ram is brought down until the reading is duplicated. At this point a stop is set to limit the ram movement. Set-up can be made also with gage blocks against calculations showing what the spring height should be in compressed position. Springs can be placed and tested with operator attention required only on reading the gage since spring length is a known constant.

Capacity range in three machine sizes is between 10 and 1,500 pounds. Maximum height of the work is 13 to 17½ in. and maximum outside diameter is 2⅝ to 6 inches. Ram travel measures 7 to 12 inches. The machine stands 31½ to 41 in. in overall height. Base dimensions of the largest unit are 11 by 23¼ inches. Weights are 130, 200 and 325 pounds.

If you write maker identify as IEN - 5400

DRYING . . Refrigerating unit removes moisture from compressed air

Source: GLENWOOD INGLEWOOD CO.
Thomas at Glenwood Sts., Minneapolis 5, Minn.

Congeals moisture in the air-stream

Supply source for dry compressed air to be used in pneumatic control lines and to operate small air-powered tools and instruments is supplied by the company's new Model CA-12 refrigerating dehumidifier. The equipment consists of a sealed Freon compressor driven by a 1/6-hp. motor with the required condensing and heat-exchange equipment through which the compressed air passes. Dry air is delivered in continuous service to supply the requirements of a control system mounting as many as 100 thermostats or other control units. Assembly is in a rectangular housing measuring 12 by 17 by 20 inches. Weight is 85 pounds. Pressure rating is 125 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 5401

timing.....
from .1 second to 5 or more minutes

AN
AGASTAT
TIME DELAY RELAY for every requirement

A·C·A 1027 NEWARK AVE., ELIZABETH 3 NEW JERSEY

A·C·A AGASTAT TIME DELAYS · A·C·A SIMPSONITE REFLECTORS · A·C·A AIRPORT LIGHTING · A·C·A MARINE LIGHTING EQUIPMENT

If you write maker identify as IEN - 5402

BOOSTED PRODUCTION 233%

Problem: How to soft solder five joints on gas tanks.

Old Way: Air-gas torch soldering.

New Way: 20-kw Allis-Chalmers induction heater with five station fixture.

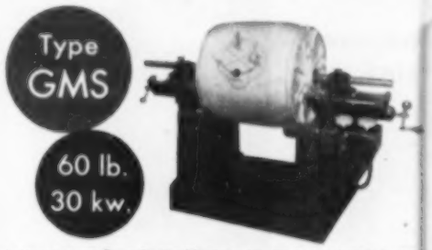
Results: Production increased from 15 to 50 tanks per man-hour. New handling methods will increase production even more.

WHETHER YOUR JOB is soldering, brazing, hardening, or annealing, it will pay you to investigate Allis-Chalmers Induction Heaters and find out about the spectacular savings you can make. In fact, there may be complete data on a job similar to yours already processed in A-C's electronic laboratory. Simply call your nearby Allis-Chalmers district office and outline your heating problems, or write Allis-Chalmers, Milwaukee 1, Wis.

ALLIS-CHALMERS A-3647

If you write maker identify as IEN - 5403

All the refinements of its big brothers!



DETROIT ROCKING ELECTRIC FURNACE

This compact, efficient 60-lb. furnace has all the features of the famous, large capacity Detroit Electric furnaces that melt metal for world famous products. Type GMS produces uniform, high quality melts with efficient and economical use of power. It's excellent for limited production, and for experimental and educational use. New rocking controller, 3-phase motor and independently-mounted electrode brackets are new features . . . Sold complete with transformer. Write for information.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. ★ BAY CITY, MICHIGAN

Foreign Representatives: in BRAZIL—Equipamentos Industriais, "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as IEN - 5404

A wide variety of internal and external chuck work can be handled with speed and accuracy on the Oster No. 601 "RAPIDUCTION" lathe. You get this machine as you want it: with WORM DRIVE (for power to make heavy forming cuts) or with DIRECT DRIVE (for high spindle speeds on small diameters and on non-ferrous metals); with 4-speed motor or with 2-speed motor; with automatically indexed, 6-position turret or with plain saddle and single tool post. Automatic chuck capacity 1⅛" round bar. Swing over bed 14". Over cross slide 6½". Write for No. 601 "RAPIDUCTION" catalog.

OSTER THE OSTER MFG. COMPANY
2053 E. 61st St., CLEVELAND 3, OHIO, U.S.A.

If you write maker identify as IEN-5405

RUBBER-TREADED!
Wears and grips like a tire

Grab-it

OUTWEARS 5 TO 10 PAIRS ORDINARY GLOVES

Tough Natural Rubber over palm and thumb. For outwears costlier leather.

Sure Grip: Rough surfaced rubber firmly grips sharp-edged, abrasive or slippery materials, tools or equipment — wet or dry.

Strong Fabric Lining and back — comfortable as a canvas glove. Very flexible.

Easy To Slip On Or Off: Safety cuff, gauntlet or knitwrist — rubber coated palm or completely waterproof styles.

Double-palm glove, worn out having 5000 fine bricks.

This Grab-It held 15,000 bricks for the same worker.

FREE TEST OFFER. Send for sample gloves for on-the-job test — to improve safety and cut glove costs 40% to 70%. Write, on your business letterhead, merely stating your job operation, materials handled and temperature condition. Without cost we will send you samples of the type glove best suited for your operation and simple guide for testing them on the job.

Edmont Mfg. Co., 1726 Walnut St. Coshocton, Ohio
World's largest manufacturers of coated industrial gloves

If you write maker identify as IEN-5406

NOTHING LIKE IT!

'Tugit' is the only lever-operated lifting and pulling tool built like a hoist. It gives you efficient, spur-gear action; has a powerful, automatic load brake for fast, smooth, safety-first operation.

'Tugit' is light, portable. Fits into any tool box. It is a compact hoist — functions perfectly at any angle in close quarters. You can use it in trenches to lay pipe. Stretching cable, assembling equipment, or stretching fences — whatever the job — 'Tugit' saves time and energy. Available in one and two-ton sizes. The smallest size will move a 1-ton load as little as ⅛" — quick, accurate spotting is easy. Write for a copy of Bulletin No. 388 for full details.

'TUGIT' ® **HOISTS**

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, and "American" Industrial Instruments.

If you write maker identify as IEN-5407

Powermaster®
PACKAGED AUTOMATIC BOILERS with VARIFLOW® Combustion

Save Fuel and Man Hours!

For light oil, heavy oil, gas and gas/oil firing. Steam generating units from 15 to 500 HP — 15 to 250 p.s.i. Hot water boiler units 30 p.s.i. Reduce operating costs as much as 40% — save man-hours — get clean, dependable heat and hot water. A.S.M.E. Code construction.

Write For Bulletin

ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa.

BUILDERS OF DEPENDABLE BOILERS SINCE 1885

If you write maker identify as IEN-5408

CRANE . . Truck mounted electric, telescoping boom, 5 ton at 5½ feet

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

Supplements overhead crane

Loading and unloading cars, handling heavy loads are the intended duties of this new truck-mounted electric crane with its 19-ft. telescopic boom. Two sizes, Type CXB and Type CXF, rate 6,000 lb. at 7-ft. radius and 10,000 lb. at 5½ feet. Control centers at the operator's position at the rear where lever-operated switches are mounted for swivel, boom elevation and load line operation as well as for travel in forward and reverse.

Swivel action is through 90 degrees. The load line operates at about 12 fpm. with a rated load in hoisting direction and 25 fpm. in movement downwards. Travel speed is 4 mph. with a rated load. The power compartment takes a lead or alkaline storage battery or a Ready Power generator.

If you write maker identify as IEN-5409

SWITCH . . Float operated for liquid level signaling and control

Source: REVERE CORP. OF AMERICA
P. O. Box 358-A, Wallingford, Conn.

First used in aircraft

A nylon float, operating in connection with a counterweight in the perforated housing of this new switch, moves a small permanent magnet up and down to open and close an electric circuit through a hermetically-sealed switch. The housing is secured to an aluminum head carrying an aircraft-type connection socket for the electric leads. Indicated applications are in signaling and control of liquid levels in containers handling beverages, liquid chemicals, foods and fuels. Assemblies are available for high or low-level operation and to hold constant level.

If you write maker identify as IEN-5410

CASTINGS . . Pictures show sequence of making non-ferrous castings in plaster molds

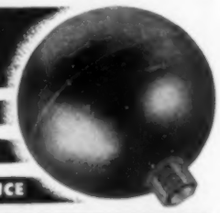
Atlantic Casting & Engineering Corp.
719-23 Bloomfield Ave., Clifton, N. J.

"Atlantalloy" casting process is described by text and a 14-step picture sequence in new 12-page booklet, "High Quality Precision Castings for Industry." Scope of the service, specifications on five standard alloys from aluminum to bronze, examples of typical production parts are included.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5411

FOR THESE *Extras*



LONGER SERVICE
LESS MAINTENANCE
HIGHER PERFORMANCE

use STAINLESS STEEL FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

CHICAGO FLOAT WORKS, INC.
2340 S. Western Ave., Chicago 8, Illinois

If you write maker identify as IEN-5412

MARK-TIME 9000-SERIES WALL TIME SWITCH
Time ranges from 2 minutes to 12 hours.
Rated at 20 amperes, 125 volt or 10 amperes, 250 volt, 1 HP operation. AC only. Available for either ON type or OFF type operation.

mark-time wall time switch
gives current saving convenience

Easily mounted in any standard rectangular wall box, this rugged, dependable Mark-Time time switch automatically controls the electrical circuit controlling attic fans, store window lights, hall and garage lights, farm lighting systems and neon signs, etc. . . .
Movements only are available for use in connection with home or factory heating control.
Write for further details and prices.

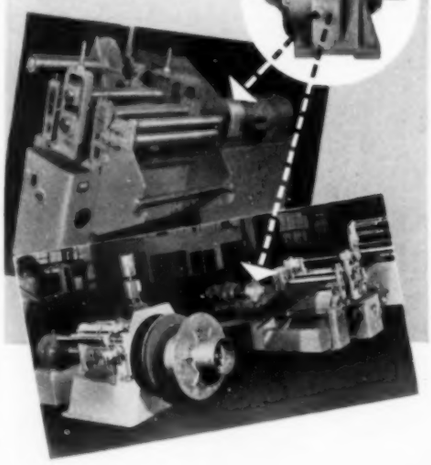
first where quality counts

M. H. RHODES, INC.
HARTFORD, CONNECTICUT

In Canada send inquiries to: Ontario Hughes Owens Co. Ottawa, Ontario

If you write maker identify as IEN-5413

the unique speed reducer that serves Yoder Rotary Slitters



Coiled strip stock in *any* width . . . *when* you need it and at *lower cost!* That's what shops equipped with Yoder Rotary Slitters are assured. For with these dependable machines, the delays and higher costs of special width stock are eliminated. Mill-width coils (always more readily available) may be slit to requirements on a moment's notice.

In designing machines to fulfill such a key assignment, The Yoder Company must naturally exercise extreme caution in selecting so vital a component as a speed reducer. And it certainly does! No. 2, 2½ and 3 sizes (two are illustrated) are equipped with compact, horizontal, Winsmith (pat.) Differential Gear Reducers . . . *unique among speed reducers!*

The heart of this design is a 6-gear planetary element, free within its housing to float into the most equalized load distributing position. Even wear, automatic compensation and alignment, smooth, enduring operation are thus assured.

For requirements within the 1/100 to 85 hp range, with ratios from 1.1:1 to 50,000:1, Winsmith is the name most remembered. Information in "Save through Standardization" folder. Write.

WINSMITH® SPEED REDUCERS

Winsmith, Inc.
10 DAVIS STREET
Springville (Erie County), N. Y.

If you write maker identify as IEN-5415

AUTOMATIC HOPPERS
and
ASSEMBLY MACHINES

for

1. Machining
2. Assembling
3. Packaging
4. Sorting

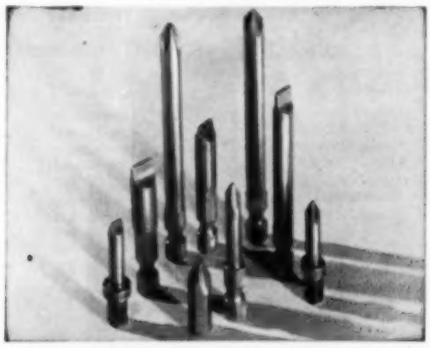
We have helped many companies to lower their production costs.

Our experience in design of automatic equipment is available to you.

SEND US YOUR PROBLEMS

KRAUS DESIGN INC.
Designers and Builders of Automatic Machinery
948 Exchange Street Rochester 8, N. Y.

If you write maker identify as IEN-5416



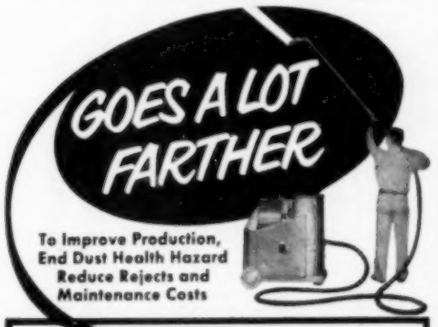
You save replacement time with HOMMEL power screwdriver bits

Specially selected alloy steel and proper heat treating have given Hommel bits the hardness and toughness required for maximum service without replacement. A complete line for air and electric power screwdrivers is available . . . consisting of ¼ hex drive and threaded shank bits for slotted, Phillips, Frearson or Reed and Prince screws. Write now for catalog to Dept. IEN.

Since 1906 **HOMMEL**

Ludwig Hommel & Co., 72 First Ave., Pittsburgh 22, Pa.

If you write maker identify as IEN-5417



To Improve Production, End Dust Health Hazard Reduce Rejects and Maintenance Costs

HOFFMAN HEAVY DUTY
VACUUM CLEANING
Bigger Capacity—Higher Vacuum
Now Available in 5 Sizes of Improved Portables. Stationary Systems in a Complete Range of Sizes. Write for New Bulletins A-814 and A-816.

AIR APPLIANCE DIVISION
U.S. HOFFMAN MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

If you write maker identify as IEN-5418

LIGHTING . . Spot light fixture for machines, inspection tables

Source: DORMITZER ELECTRIC & MFG. CO.
3-7 Hadley St., Dept. N, Cambridge 40, Mass.

For a bright light spot

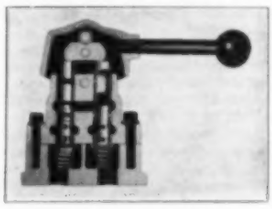
Dyna-Ray trade names a new lighting fixture that employs a sealed-beam reflector lamp operating through a transformer at 6 volts from 110-volt a.c. line. It is available in a Type M-114-S with a beam spread of 4½ by 5½ deg. to cast a circular spot 6 in. in diameter with an illumination intensity of 1,000 ft. candles on the target. Type M-114-W casts a narrow slit beam with a spread of 40 by 5 deg. to provide 8,500 candle power in the beam. Type M-114-F has a rectangular beam spread of 80 by 20 deg. and 500 beam candle power. In each type the beam is shielded to avoid striking a worker's eyes. Lamp life at rated voltage is 1,000 hours.

The fixture is available with a bench clamp for use interchangeably with a detachable base and with a 30-in. extension arm that can be applied between the base and lamp head. An angle bracket is supplied to mount the head directly on the transformer. The transformer mounting plate is suitable to assemble directly on a standard 3½ in. outlet box cover. The head housing is made of aluminum measuring 6 in. in greatest diameter. The transformer measures 2½ by 3½ by 2½ inches. It connects to the lamp through a 10-ft. cord. A 6-ft. cord and plug also are supplied.

If you write maker identify as IEN-5419

VALVE . . Lever operated four way for pneumatic control, ¼ to ¾ inch

Source: NUMATICS
823-27 Commerce Road, Milford, Mich.



O-rings prevent leakage

New design of the company's operating valve, previously described IEN-2599-49, employs springs beneath the two cylinder-type poppets. The springs hold the valve in neutral against sealing seats made of oil-resistant O-rings. As in the previous design, the valve is operated by a rocker in pivoted position beneath a hood to which the operating lever is attached. The rocker bears upon two pistons, also sealed with O-rings, to move one or the other of the operating poppets downward against the spring pressure or to release it so it comes up to neutral position again.

The poppets are made of brass and operate in a bronze housing that is secured by screws to the base carrying the threaded line connections. Thus housing and poppets can be removed from the base for inspection or maintenance without disturbing the pipe connections.

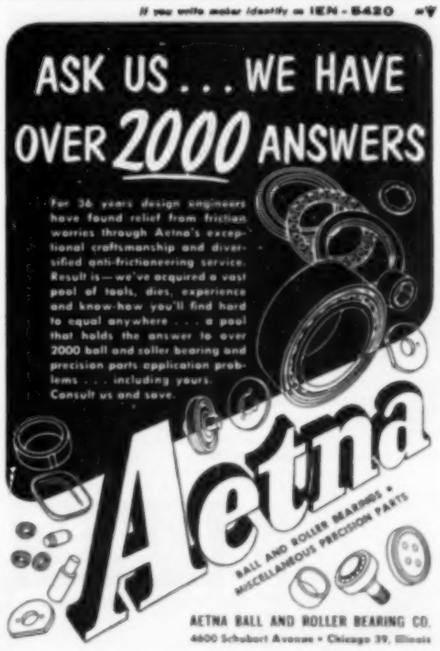
Three types of operating rocker include locking, non-locking and combination designs. The locking design is secured in engaged position. All three rockers are interchangeable.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5420

ASK US . . . WE HAVE OVER 2000 ANSWERS

For 36 years design engineers have found relief from friction worries through Aetna's exceptional craftsmanship and diversified anti-frictioneering service. Result is—we've acquired a vast pool of tools, dies, experience and know-how you'll find hard to equal anywhere . . . a pool that holds the answer to over 2000 ball and roller bearing and precision parts application problems . . . including yours. Consult us and save.



AETNA BALL AND ROLLER BEARING CO.
4600 Schubert Avenue • Chicago 39, Illinois

If you write maker identify as IEN-5421

Better production for world's largest corn packer

● In this progressive Midwestern plant, fresh corn from the husking machine is carried on a Cyclone Chain Drive Spiral Woven Conveyor Belt through continuous, automatic washing, sorting, processing and inspecting operations. Packer reports results are: reduced labor costs—less manual labor—better product quality.

Cyclone Metal Conveyor Belts are adaptable to a great variety of food—and other manufacturing plant—operating conditions, whether large or small. Our engineers will advise you on which of the three belt types—Spiral Woven, Flat Wire and Flex-Grid—is right for your processing bottleneck. Send to Dept. C-52 for a free copy of Catalog #4.

U·S·S CYCLONE METAL CONVEYOR BELTS

CYCLONE FENCE DEPT.
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL COMPANY
WAUKEGAN, ILLINOIS

USS

UNITED STATES STEEL

If you write maker identify as IEN-5422

Jam-packed with cost-cutting, efficiency-boosting characteristics, the Johnson Joint offers exciting possibilities you should know about. It's a packless, self-lubricating and self-adjusting way to get heating or cooling agents in or out of rotating machine parts; used on calenders, dryers, ironers, mills and similar machines. There are hundreds of design and production problems for which it holds the perfect answer.

Write for complete literature

The Johnson Corporation
846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN-5423

Yarway Impulse Steam Trap is hardly larger than a pipe union. Easily installed *anywhere*. ½" trap weighs 1¼ lbs.; 2" trap only 8½ lbs. Over 650,000 Yarway traps have been *proved on the job*. Sold by over 200 distributors. For name of nearest one, or free bulletin, write . . .

YARNALL-WARING CO., 122 Mermaid Ave., Phila. 18, Pa.

YARWAY IMPULSE STEAM TRAP

If you write maker identify as IEN - 5424

FIVE reasons why it's "SAFETY" FIRST!

Blue Devil SOCKET SCREW PRODUCTS

for all socket screw products

★ safer to use
★ easier to use
★ better wrenching
★ higher quality
★ complete selection

SOLD ONLY BY AUTHORIZED INDUSTRIAL DISTRIBUTORS

SAFETY SOCKET SCREW COMPANY

6508 Avondale Avenue, Chicago 31, Illinois

If you write maker identify as IEN - 5425

DON'T RISK PAINT FAILURE

New, free book brings industrial painting facts up to date. We don't make paint. But to help you get full value from the paint you buy, we'll send you this fact-packed book on aluminum paints. Read it before you plan another paint job. It can save you time and dollars.

You may know that aluminum paint is best for many places in your plant. But do you know what *kind* of aluminum paint is best for each job? Some are specially formulated for painting metal and masonry, others for wood, others for heated surfaces. Mail the coupon for the free book that answers these and hundreds of other paint questions.

SEND FOR FREE BOOK

ALUMINUM COMPANY OF AMERICA,
Paint Service Bureau, 1786-E Gulf Bldg., Pittsburgh 19, Pennsylvania.

Please rush me free copy of "Painting with Aluminum."

Name (please print) _____
Address _____
City _____ State _____
We plan to paint the following _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.

ALCOA ALUMINUM

ALBRON ®

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

BATTERIES . . "Eveready" dry batteries for portable electronic equipment; sizes, ratings, application notes. "Battery Engineering Bulletin 1-52", 4 pages. National Carbon Co., 30 E. 42nd St., Rm. 308, New York 17, N. Y. **IEN-0462**

BEARINGS . . Nylon liner inside a steel shell; operating features, design advantages, application suggestions, types. Bulletin, "Nylined Bearings", 4 pages. Thomson Industries Inc., 1027-31 Plandome Road, Manhasset, N. Y. **IEN-0463**

BISMUTH . . In ductile wire form; physical properties, electric and thermoelectric properties, uses, bibliography. "Ductile Bismuth Wire", 24 pages. Fitzpatrick Electric Supply Co., 442-46 Irwin St., Muskegon, Mich. **IEN-0464**

BLOWERS . . Type-V multi-stage centrifugal units with inlet volume from 1,500 cfm.; construction details, sectional view, examples. Bulletin 19-B-6104A, 6 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-0465**

CALCULATING . . Accounting machine to compute and print statistical information; illustrated description of what it will do. Bulletin AB-423, 6 pages. Remington Rand Inc., 315 Fourth Ave., Room 1618, New York 10, N. Y. **IEN-0466**

CASTINGS . . Picture book traces production of malleable iron castings from pattern shop to finishing, shows equipment, personnel, research. "Men and Metal", 20 pages. Albion Malleable Iron Co., 601 N. Albion, Albion, Mich. **IEN-0467**

CASTINGS . . Made by "Microcast" wax-investment process; illustrated steps, alloys and properties, design possibilities. "New Opportunities", 16 pages. Austenal Laboratories Inc., 5930-34 S. Wentworth Ave., Chicago 21, Ill. **IEN-0468**

CLEANING . . Services for industrial waste and drain lines; review of cleaning, construction, repair, detecting, design and testing facilities. "Service", 4 pages. Pittsburgh Pipe Cleaner Co., 131-35 Dahlen St., Pittsburgh 6, Pa. **IEN-0469**

CLEANING . . Power sweeping machines for factory floors, streets; picture review of models, chart of area swept per hour. Bulletin S-101, 4 pages. Wilshire Power Sweeper Co., 524-28 W. Chevy Chase Drive, Glendale 4, Calif. **IEN-0470**

CONNECTORS . . Laboratory and switchboard type plugs and receptacles; dimensional drawings, ratings, application notes. Bulletin LS-5, Fifth Edition, 12 pages. Cannon Electric Co., P. O. Box 75-A, Los Angeles 31, Calif. **IEN-0471**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5427

DIRT'S NO PROBLEM for the SKF "SAF" Pillow Block

The "SAF" Pillow Block is SKF's answer to dirt problems:

- triple-seal rings give three-fold protection in dirt-gathering locations; seal out foreign matter; seal in oil or grease; self-aligning.
- special stabilizing rings between housing shoulder insure fixed position of shaft in bearing during operation.
- types for light, normal and heavy duty.

Write SKF Industries, for complete details, or contact your SKF Distributor. SKF INDUSTRIES, INC., PHILADELPHIA 32, PA. —*manufacturers of* SKF *and* HESS-BRIGHT *bearings.*

SKF BALL AND ROLLER BEARINGS

IN EVERY INDUSTRY, SKF Puts The Right Bearing In The Right Place

If you write maker identify as IEN - 5428

a "Workhorse" for accurate, dependable temperature Control!

A ruggedly built control of great accuracy and sensitivity for a wide variety of heating applications with a maximum range of 550°F. No separate "off" switch. Mechanism actuated by hydraulic thermostatic element consisting of bulb, capillary tube and diaphragm. Write for Catalog D-1.

In Home and Industry, EVERYTHING'S UNDER CONTROL

Robertshaw THERMOSTAT DIVISION

Robertshaw-Fulton Controls Company • Youngwood, Penna.

If you write maker identify as IEN - 5429

..Fits like a Glove

WHATEVER YOUR ELECTRIC MOTOR REQUIREMENTS THE MOTOR CARRYING THE FAIRBANKS-MORSE SEAL WILL FIT THE JOB ...like a Glove!

A.C. or D.C. . . . single phase or polyphase . . . induction or synchronous . . . in all ratings and frame types —whatever the need, you can find the one motor best suited to the job in the complete line of Fairbanks-Morse Motors. Call your nearby Fairbanks-Morse electric motor branch for details, or write: Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE,

a name worth remembering

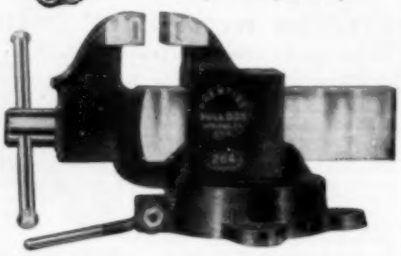
ELECTRIC MOTORS AND GENERATORS • MAGNETOS • PUMPS
DIESEL LOCOMOTIVES AND DIESEL ENGINES • FARM MACHINERY
SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT

If you write maker identify as IEN-5430

PRENTISS

"BULL DOG" VISES

Backed by 80 years of time-proven acceptance by industry.



MACHINISTS — TOP SWIVEL JAW — COMBINATION PIPE HINGE PIPE — WOODWORKERS — UTILITY

Renewable steel jaws that cannot work loose, swivel base with a positive lock plus other features give you vises that will stand the most severe tests. Send for THE NEW PRENTISS CATALOGUE TODAY.

See Us at Booth 737, Triple Mill Supply Convention.

PRENTISS VISE DIVISION

OF THE CHARLES PARKER CO., MERIDEN, CONN., U. S. A.

If you write maker identify as IEN-5431

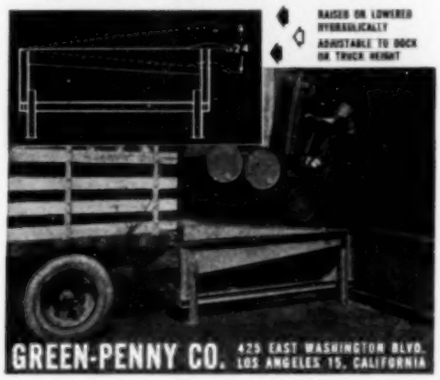
HYDRAULICALLY CONTROLLED **adjustable**

Loading ramp

No installation is required for the Green-Penny Loading Ramp. Just set in place and plug into convenient 110v. outlet. No costly extras needed. It is adjustable to dock height and is hydraulically raised or lowered to truck bed. "It floats with the bed."

Easy to operate. Single-control lever, flush with the deck, raises or lowers ramp. Deck travel is 24". Capacity 20,000 lbs. Two sizes.

Simplify loading operations and make your shipping department more efficient. Write for Bulletin No. 100.



GREEN-PENNY CO. 425 EAST WASHINGTON BLVD. LOS ANGELES 15, CALIFORNIA

If you write maker identify as IEN-5432

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO-GRAM HEAVY DUTY SCALE

To speed up heavy duty weighing operations. Detecto-Gram Scale Model #1744 insures against overweight losses. Shows weighing error promptly. Famous for hair-line accuracy.

Write for literature

DETECTO SCALES · INC.

MAKERS OF FINE SCALES SINCE 1900

BESS PARK AVENUE • BROOKLYN 6, N. Y.

SCALE ENGINEERS IN ALL PRINCIPAL CITIES

NEW LITERATURE — Continued

CONNECTORS . . Compression-type terminals for copper or aluminum cable; operation, dies and tools, standard terminals, dimensions, specials. Bulletin 67, 36 pages. Thomas & Betts Co., 60-A Butler St., Elizabeth 1, N. J. **IEN-0472**

CONNECTORS . . Coaxial-cable connectors in Types N, HN, and BNC; also JAN-P-642 telephone plugs; picture examples, note on facilities. Bulletin 52-1, 2 pages. Waltham Horological Corp., 897 Main St., Waltham 54, Mass. **IEN-0473**

CONSTRUCTION . . Adjustable steel shores to use in building construction; standard sizes and capacities, notes on self-cleaning features, picture uses. "Acrow Shores", 4 pages. Acrow Inc., 508-12 N. Dearborn St., Chicago 10, Ill. **IEN-0474**

CONTRACT WORK . . In sheet metal fabrication; picture examples, notes on plant equipment and personnel. "Craftsmen in Sheet Metal Production", 20 pages. Lyon Metal Products Inc., 1734 Montgomery St., Aurora, Ill. **IEN-0475**

CONTROLS . . "Protectron" electronic control to stop machine operation on overload; description, models, table of ranges and voltages, examples of use. Bulletin 252, 8 pages. Brinnell Co., 51 Thomas St., Simsbury, Conn. **IEN-0476**

CONTROLS . . "Regohm" multiple-finger rocking-contact control for voltage, current, speed; operating schematic, characteristics, uses. Bulletin 505.00, 12 pages. Electric Regulator Corp., 48-52 Day, So. Norwalk, Conn. **IEN-0477**

CONTROLS . . "Pressure Pilot" non-indicating pressure control; operating principle, design features, specifications. Bulletin 16-1, 8 pages. Minneapolis-Honeywell Regulator Co., 4456 Wayne Ave., Philadelphia 44, Pa. **IEN-0478**

CONVEYING . . Apron, belt, bucket, drag conveyors and feeders; chain and sprocket selection data, drives, particularly for rock products. Bulletin 52-53, 44 pages. Chain Belt Co., Dept. PR-461, Milwaukee 1, Wis. **IEN-0479**

CONVEYING . . Picture book to show applications of the company's "Streamliner" power conveyors including apron, belt, chain, roller types. Bulletin 302, 24 pages. Harry J. Ferguson Co., 199 West Ave., Jenkintown, Pa. **IEN-0480**

CONVEYING . . Rough-top rubber-fabric conveyor belts; illustrations of five non-slip surface designs, table of allowable inclines. Folder A-5148-K, 4 pages. Goodyear Tire & Rubber Co., 1142-46 E. Market St., Akron 16, Ohio **IEN-0481**

CONVEYING . . Belt, chain, roller, wheel types for container and package handling; standard units, applications. Catalog, letterhead request, 154 pages. Island Equipment Corp., 27-03 Bridge Plaza, Long Island City 1, N. Y. **IEN-0482**

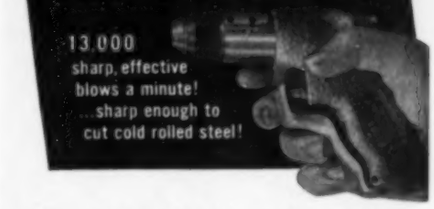
CRUSHING . . Roll and ring-type machines; operating descriptions, capacity-rating and power-requirement tables, accessories, controls. Bulletin 12-C, 16 pages. Stephens-Adamson Mfg. Co., 231 Ridgeway Ave., Aurora, Ill. **IEN-0483**

CUTTING . . Tungsten-carbide cutting tools and blanks; sizes and list prices on standard units, recommended speeds and feeds, grinding. Catalog 108, 16 pages. Greenleaf Corp., 510-14 Franklin Ave., Pittsburgh 21, Pa. **IEN-0484**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-5433

Don't Underestimate the power of the BANTAM BULLY!



The amazing Bantam Bully air hammer gives you real power in an easy-to-use size. It is 5" long and weighs only 22 ozs. Exclusive metering trigger regulates the power from a feather touch to a powerful blow. Full speed and power attained on less than 6½ C.F.M. of air.

Use it for scaling, chiseling, peening, tamping, cutting, routing, grooving, caulking, channeling, chipping, driving, drilling, marking, and hundreds of other applications.

Write for full details on the Bantam Bully, Big Bully, Bully blow gun and the Bully Fulflo air filter.

Superior Pneumatic and Manufacturing Co.

4759 WARNER ROAD • GARFIELD HEIGHTS, OHIO

If you write maker identify as IEN-5434

ENGRAVE

PANELS OF ANY DIMENSIONS

IN YOUR OWN SHOP

with the Engravo graph

PORTABLE MODEL 6-B

The only portable machine which reproduces 15 sizes from one master alphabet.

The only one with adjustable copy holding slides for multi-line engraving in one set-up.

Self-centering holding vise for nameplates.

Send for Booklets

I-S—23 portable model • H—23 heavy duty model

NEW HERMES, Inc. 13-19 University Place, N.Y. 3

In Canada: 359 St. James St., Montreal

World's largest Manufacturer of Portable Engraving Machines

If you write maker identify as IEN-5435

WRENN PAPER COMPANY

SELECTS B&S **SHEAR-CUT SLITTER-REWINDER**

The Wrenn Paper Company, widely recognized for its high quality products, was faced with the problem of slitting a hard-to-handle material. Clean, square edges and uniformly wound rolls were of utmost importance.

After considering several machines, the Bagley & Sewall #15 Shear-Cut Slitter-Rewinder was selected.

B & S Slitters and Rewinders are doing outstanding jobs in mills and converting plants all over the country. Their many unique money-saving advantages make them the first choice of the industry. Before you buy, *compare*...and your choice, too, will be B & S Slitting and Rewinding equipment.

For full details write to The Bagley & Sewall Company, Watertown, New York.

Inserts show Shear-Cut Slitter Units

BAGLEY & SEWALL

designers and builders of

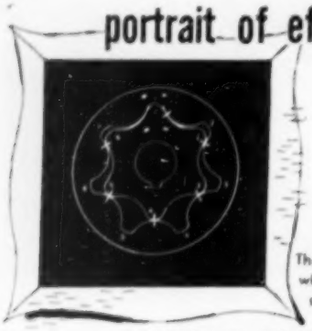
WATERTOWN, NEW YORK

QUALITY MACHINERY SINCE 1853

Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Ave., New York 20

If you write maker identify as IEN-5437

portrait of efficiency



The unique device whose likeness you see here — the famed Gerotor gear mechanism — is the No. 1 reason for the high volumetric and mechanical efficiency of Gerotor Hydraulic Pumps. Revolving in the same direction at low relative speed, the two Gerotors wear less — last longer — assure more uniform flow. Pressures to 1200 p.s.i. continuous, 1500 intermittent.

GEROTOR hydraulic pumps

GEROTOR MAY CORPORATION, Baltimore 3, Md.

If you write maker identify as IEN-5438

LOU'S FAVORITE QUOTE TO WIFE AND KIDS "A PLACE FOR EVERYTHING"

And the place for that pipe dope is on the pipe — not on the valve threads where it is apt to be forced into the disc and cause defective action.

Send for free book on valve installation tips.

Ohio Brass VALVES
MANSFIELD OHIO

If you write maker identify as IEN-5439

PNEUMATIC HOIST with ROTARY AIR MOTOR

Capacities 250 lbs. to 1 ton Fast Lifting Speeds

Pulseless, rotary, air motor; no pistons, no reciprocating parts

PT Hoist shown with a monorail trolley; can also be furnished with upper suspension hook.

- Worm Geared
- Compact, Light Weight
- Exceptionally Smooth Running
- Close, Sensitive Control

• Write for PT Bulletin 708

DETROIT HOIST & MACHINE CO.
8229 Morrow St., Detroit 11, Mich.
Designers and Manufacturers Since 1905

NEW LITERATURE — Continued

CUTTING . . Abrasive cut-off wheels for use on machines made by Stone Machinery Co.; recommendations by service, performance, operating hints. Folder 6921, 8 pages. Raybestos-Manhattan Inc., 63-65 Willett St., Passaic, N. J. **IEN-0485**

DIE CASTING . . Plunger-gooseneck machines for zinc, lead, tin; cold-chamber machines for aluminum, magnesium, brass; ratings, operating features. Folder 23-1, 6 pages. Lake Erie Eng. Corp., 325 Woodward Ave., Buffalo 17, N. Y. **IEN-0486**

DIE CASTINGS . . In aluminum and zinc; description of company's contract service from engineering to finishing, plant facilities. "Proof of Progress", 24 pages. Middleville Eng. & Mfg. Co., 352 Thomas St., Middleville, Mich. **IEN-0487**

DRAFTING . . Aluminum scales for drafting machines; illustrated description of construction points, types and graduations. "Duraline", 6 pages. Universal Drafting Machine Co., 7958-62 Lorain Ave., Cleveland 2, Ohio **IEN-0488**

DRIVES . . Stock steel sprockets with "QD" split tapered hubs; classification table, sizes, dimensions, list prices, assembly notes. Catalog, "QD Sprockets", 9 sheets. Martin Machine Co., 2007-11 E. Main, Grand Prairie, Texas **IEN-0489**

DRIVES . . Variable-speed motors and motorized speed reducers; construction points, control, motor types, ventilation. Catalog 174, 20 pages. Sterling Electric Motors Inc., 5399-03 Telegraph Road, Los Angeles 22, Calif. **IEN-0490**

DUST COLLECTING . . "Dustube" cloth-type collectors; operating features, notes and illustrations on use in ceramic plants. Bulletin 252-A, 4 pages. American Wheelabrator & Equipment Corp., 1119 S. Byrkit, Mishawaka, Ind. **IEN-0491**

DUST COLLECTING . . Type-CM cloth-bag collector for industrial dusts; assembly views, operating description, table of standard sizes. Bulletin 914, 8 pages. Pangborn Corp., 230 Pangborn Blvd., Hagerstown, Md. **IEN-0492**

DUST COLLECTING . . Cyclone-type assemblies, capacity 1,400 to 22,000 cfm. in 11 sizes; construction points, sizes, application. Bulletin, "Design No. 6", 4 pages. Quinn Brothers Inc., 1710-14 N. 2nd St., Philadelphia 22, Pa. **IEN-0493**

DUST COLLECTING . . Self-contained units for grinders and other machines; internal views and capacities on a line, application notes, accessories. Catalog 36, 24 pages. Torit Mfg. Co., Exchange & Walnut Sts., St. Paul 2, Minn. **IEN-0494**

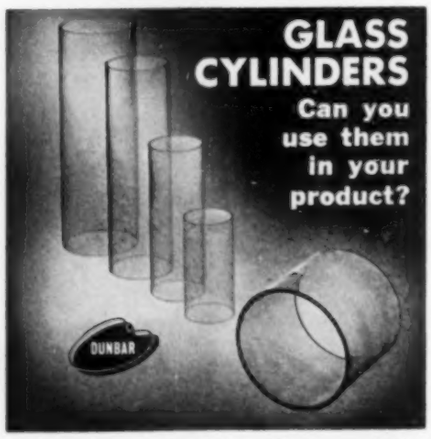
ELECTRICAL PRODUCTS . . Mercury batteries, contacts, capacitors, resistors, switches, resistance-welding electrodes; data summaries. "Product Index", 12 pages. P. R. Mallory & Co., 3031 E. Washington, Indianapolis 6, Ind. **IEN-0495**

ELECTRONIC PRODUCTS . . "Burroughs Unitized" pulse-control equipment; summary on standard basic assemblies, notes on combinations as in counting. Bulletin, 16 pages. Control Instrument Co., 69 35th St., Brooklyn 32, N. Y. **IEN-0496**

ELEVATORS . . Tubular-framework elevating towers for construction work; data on single and double-well designs, components, dimensions. Catalog 249, 8 pages. American-Tubular Elevator Co., 352 Thomas St., Zelienople, Pa. **IEN-0497**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as IEN-5440



GLASS CYLINDERS
Can you use them in your product?

For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 971 for our Glass Cylinder catalog No. C-51.

Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK • CHICAGO • LOS ANGELES

If you write maker identify as IEN-5441

"NO MORE SOLDER REJECTS"
Says J. H. WINN SONS
Manufacturers of Radio Dial Pointers

PRECISION WELDING WITH RAYTHEON WELDPOWER* UNITS
Cuts Rejects, Eliminates Expensive Solder

"Soldering and other assembly defects sometimes spoiled up to 80% of our production," says J. H. Winn Sons, Winchester, Mass. *"Changing to precision welding with Raytheon Weldpower* Units cut out completely all soldering rejects and at the same time eliminated the need for scarce and costly solder."*

Ask us to show you how Raytheon Condenser Weldpower can improve production of small parts involving assembly of non-ferrous or dissimilar metals. Send sample parts and details . . . or write for complete information.

*Reg. U. S. Pat. Off.

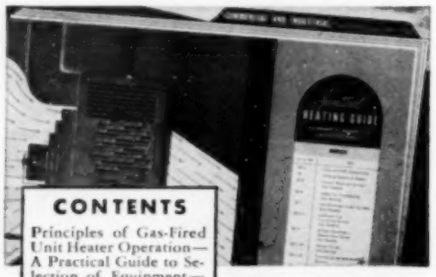
Address Dept. IN-5

Raytheon Condenser Weldpower Control Units are available in three sizes and with appropriate Weldpower Heads.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland
Chicago • New Orleans • Los Angeles • San Francisco • Seattle

If you write maker identify as IEN-5442

VALUABLE GUIDE ON PRACTICAL USE OF UNIT HEATERS for industrial installations



CONTENTS
Principles of Gas-Fired Unit Heater Operation — A Practical Guide to Selection of Equipment — Typical Floor Plan Layouts for Commercial and Industrial Installations — Use of Automatic Controls — Specifications — Combining Heat with Air Conditioning.

WRITE TODAY FOR FREE COPY

SURFACE COMBUSTION CORPORATION, DEPT. D, TOLEDO, OHIO

Janitrol
GAS-FIRED UNIT HEATERS

If you write maker identify as IEN-5443

Prevent die damage! . . . with

MAGLINER Magnesium SAFETY TONGS

LIGHT! RIGID!
ROOMY HANDGRIPS!
AUTOMATIC CONTROLLED OPENING!

MANY MODELS TO CHOOSE FROM • Write for descriptive bulletin ST-501

Magliner Inc.
P.O. BOX 383
PINCONNING, MICHIGAN

If you write maker identify as IEN - 5444

If you write maker identify as IEN - 5445

Save Money with U. S. Royalite Tote Boxes!

Impervious to factory damage hazards, tote boxes made of U. S. Royalite save you money all around!

Tough, lightweight U. S. Royalite is waterproof, stainproof, not affected by oils, alkalies, most acids. Tote boxes made of this durable plastic are of *one-piece design* without rods, rivets, or seams. No metal parts to break, rust or corrode.

Speed up production line operations . . . cut manual handling time with U. S. Royalite tote boxes. Available *now* in a wide range of widths, depths and colors.

CHECK LIST OF ADVANTAGES OF U. S. ROYALITE TOTE BOXES

- √ Available immediately in any size
- √ Tough—will last indefinitely
- √ Lightweight
- √ Highly resistant to impact, non-splintering
- √ Not affected by oils, alkalies, most acids
- √ Color-permeated throughout for easy departmental segregation
- √ Will stack or nest
- √ Adaptable to any type conveying system
- √ Non-warping, non-corrosive
- √ Waterproof, stainproof, non-magnetic

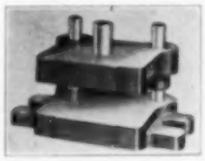
U.S. ROYALITE
TOUGH PLASTIC PRODUCTS

UNITED STATES RUBBER COMPANY
3638 North Pulaski Road, Chicago 39, Illinois

If you write maker identify as IEN - 5447

PRESS TOOLS . . Standard die sets stocked regular, reverse, long-narrow

Source: DIE SUPPLY CO.
1401 Brookpark Road, Cleveland 9, Ohio



Ask for Catalog 6

New line of steel die sets in standardized stock sizes has been added to the company's lines of special sets and press-tool accessories. Sizes range in die space from 3 by 3 in. to 25 by 14 in., each in a range of die-holder and punch-holder thicknesses. Detail information including dimensions, identification, list prices are included in a new Section 1 of the company's Die Sets Catalog.

In addition to the complete sets the stock includes precision and commercial guide pins and bushings, Ampco metal No. 18 bushings, shoulder guide pins and bushings, punch shanks, shank adapters and holders, pry bars, guide-pin oilers, Lubriplate guide-pin grease, screws, nuts and bolts, springs.

If you write maker identify as IEN - 5448

PLASTIC . . Laminating varnish contains rubber for impact, flexibility

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

Technical data upon request

No. 12359 is a new rubber-phenolic varnish for laminating application in manufacture of gear blanks, shuttles, tubing, caster wheels in which impact strength, flexibility and toughness are required characteristics. The new material tests to about three times the impact strength of previous phenolic varnishes the company has manufactured.

In addition to manufacture of products of the types named, the new material has been tested as a coating for paper to be used in packaging. In this use it imparts strength and excellent resistance to penetration by moisture.

If you write maker identify as IEN - 5449

VISE . . Cam operated design on adjustable stand for light work

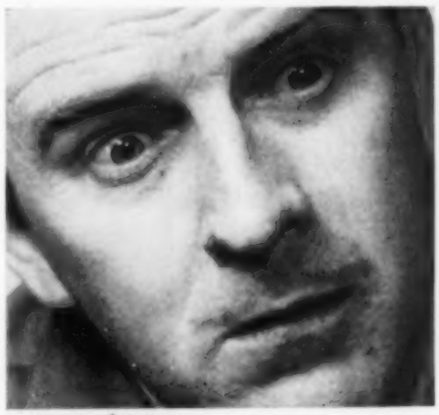
Source: WILTON TOOL MFG. CO.
927-39 Wrightwood Ave., Chicago 14, Ill.

Universally adjustable

Fibre jaws, measuring 2 in. in width, are operated through a closing and opening movement of 3/16 in. from full-open position at 3/8 in. in this new Cam Acting vise. It is available on an adjustable stand, as shown in the illustration, to permit positioning light work quickly for operations such as soldering and assembly. The base is known as the company's Powrarm. It has work-weight capacity to 24 pounds. A control knob applies or releases pressure by a pad under the swivel ball on which the vise is mounted. List price of the complete assembly is about $18.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 5450



FRUSTROSITY* CASE No. 21: Mr. Visgobad is wondering what happened! If he had a 1952 Brookfield Viscometer at hand, he would know all the viscosity answers — *could make determinations directly in centipoises in a matter of seconds in lab, plant, or both.* Whether the materials you work with are Newtonian or non-Newtonian, you owe it to your wife, customers and co-workers to get up-to-date information on Brookfield Viscometers *adaptable to any problem from less than one to 32,000,000 centipoises.* Ask your Lab Supply House or drop a line to **Dept. G,** Brookfield Engineering Laboratories, Inc., Stoughton, Mass.

*FRUSTROSITY is that frustrated condition a man gets into when his problem is Viscosity Determination or Control and he hasn't asked BROOKFIELD.

If you write maker identify as IEN - 5451

FOR YOUR PANEL DIALCO

A NOVEL and UNIQUE CIRCUIT INDICATOR

DESIGNED FOR NE-51 NEON LAMP
For 110 or 220 volt circuits
The required resistor is an integral part of this assembly —"built-in."
RUGGED DEPENDABLE LOW IN COST

PATENTED: No. 2,421,321; Cat. No. 521308-997

WILL *YOU* TRY A SAMPLE?

Write on your company letterhead. We will act at once. No charge, of course.

SEND FOR THE 192 PAGE HANDBOOK OF PILOT LIGHTS

Among our thousands of Pilot Light Assemblies there is one which will fit your special conditions. Many are especially made and approved for military use. We pride ourselves on prompt deliveries—any quantity.

ASK FOR OUR APPLICATION ENGINEERING SERVICE

Foremost Manufacturer of Pilot Lights

The DIAL LIGHT COMPANY of AMERICA

800 BROADWAY, NEW YORK 3, N. Y. SPRING 7-1300

If you write maker identify as IEN - 5452

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

3639

DRYING and CONCENTRATING CO.
410 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 5453

Saves you more time than any other tool in your kit

A Journeyman's tool, built to stand up under constant, on-the-job Contractor or Industrial use.

Built-in Blower—Anti-friction replaceable bearings—No starting hole needed—Blades to cut all materials—Fits any heavy duty ¼" or ⅜" drill.

Super Saws and Blades are listed on Federal Supply Schedules, Class 40 Material.

Write for literature and prices

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U. S. A.

If you write maker identify as IEN - 5454

STRONG LINKS for your PRODUCTION CHAIN

Quadriga®

SPECIAL STAMPINGS AND WASHERS . . .

Small parts are important, too—that's why so many manufacturers depend on Quadriga custom-fabricated washers and stampings to help make a better finished product . . . reduce wear, noise, and vibration. Tension, spring, formed, drawn, cupped or finishing washers of any material quickly supplied. Also, wire terminals. Stampings of any design or material. Press capacity to 150 tons, depth of draw to 4". We build the dies.

Send B/P, samples, or data for estimates and ask for new illustrated catalog.

THE QUADRIGA MANUFACTURING CO.
215-A West Grand Avenue Chicago 10, Ill.

If you write maker identify as IEN - 5455

Now...Spring Makers and Spring Users alike have a Uniform Method for Testing Springs!

THE TORRINGTON SPRING TESTER

Uses: for accurate inspection, in-use testing, designing springs for specific uses, and as a basis for statistical quality control.

Simple: can be used at operating levels by relatively inexperienced personnel. Portable!

Accurate: 2 models—the 3 pound model measures loads to the nearest 1/100 ounce, and the 16 pound model to the nearest 1/5 ounce; lengths and deflections to 1/1000 inch.

Fast: requires minimum time to adjust for accurate readings, or to reset for other springs.

Practical: measures under conditions approximating actual use, through interchangeable fittings.

High sensitivity: over a wide range, on both tension and compression types of springs.

For complete information please write:

The TORRINGTON MANUFACTURING COMPANY TORRINGTON, CONNECTICUT

WORLD'S LARGEST BUILDERS OF SPRINGMAKING MACHINERY

If you write maker identify as IEN - 5456

GR Type 631-B Strobotac . . . $148.

MOTION ANALYZER

The Strobotac is a generator of short duration, high intensity light flashes, the rate of which can be controlled by turning a knob calibrated to read in rpm. It is portable, inexpensive, light weight and very easy to operate.

HERE'S WHAT THE STROBOTAC CAN DO FOR YOU

- Enables the examination of a machine's exact operation while the machine is actually running at normal speed
- Makes a machine or any of its parts appear to stop at any point of its cycle, or appear to move slowly through its cycle
- Serves as a direct-reading electrical tachometer between 600 and 14,400 rpm. It can "stop" motion from 600 to 100,000 rpm. It requires no electrical or mechanical contact between the machine and the Strobotac
- Permits study of gear meshing, belt slippage, crankshaft and piston motion, or any rotating, vibrating or reciprocating movement
- Enables checking machines for maintenance purposes
- Invaluable in all stages of design, development, maintenance and sales

For complete information ask for EYES FOR INDUSTRY

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5
7000 North Seward St. LOS ANGELES 38

NEW LITERATURE—Continued

ELEVATORS . . Variable-voltage equipment for elevator drive; construction details on hoisting motor and motor-generator set, modifications. Bulletin 8300, 4 pages. Electro Dynamic Div., North & Avenue A, Bayonne, N. J. **IEN-0498**

ENGINES . . Type 4-FS diesel engines, 10 to 45 hp.; construction points on the engine alone, data on generator, pump, takeoff assemblies. Bulletin 194, 12 pages. Nordberg Mfg. Co., 3071-75 S. Chase Ave., Milwaukee 7, Wis. **IEN-0499**

FASTENINGS . . Cotter pins in "Hoblok" locking type and "Loxit" extended-prong type; sizes, list prices in steel, brass, stainless. Folder 750, 4 pages. Hobbs Mfg. Co., Dept. N-6, 24-28 Salisbury St., Worcester 5, Mass. **IEN-0500**

FASTENINGS . . Aircraft rivets in solid aluminum and tubular designs; illustrated types with AN numbers, specifications, pieces per pound. "Handy Guide . .", 4 pages. Milford Rivet & Machine Co., 252 Post Road, Milford, Conn. **IEN-0501**

FEEDING . . Belt-type gravimetric feeder for dry materials, 100 to 100,000 lb. per hr.; schematic operating principle, feed rates. Bulletin 35-F5H, 4 pages. Omega Machine Co., 343-47 Harris Ave., Providence 1, R. I. **IEN-0502**

FILTERING . . Automatic backwash sand filter for water-supply and waste treatment; operating description, sectional views, flow sheets on typical applications. Bulletin 46-A, 12 pages. Hardinge Co., 238-42 Arch St., York, Pa. **IEN-0503**

FURNITURE . . Metal chairs, stools, desks, shelving, benches, record cabinets; construction features, sizes, finishes, illustrated groups. 1952 Catalog, 80 pages. Royal Metal Mfg. Co., 173-7 N. Michigan Ave., Chicago 1, Ill. **IEN-0504**

GAGES . . "Lifetime-Carbide" and steel gage blocks; properties, manufacture, wringability, sizes and list prices, standard sets. Bulletin, "Precision in Millionths", 8 pages. Fonda Gage Co., 57-61 Daly St., Stamford, Conn. **IEN-0505**

GAGES . . "Century" optical comparator with 16 by 20-in. screen, 10X to 100X magnification; construction details, accessories. Folder K-1, 4 pages. Portman Instrument Co., 10 Manhasset Ave., Port Washington, N. Y. **IEN-0506**

GENERATORS . . Low-voltage dc. motor-generator sets for plating and electrochemical work; construction, examples, controls. Bulletin 20-120, 14 pages. Electric Products Co., 1723-27 Clarkstone Rd., Cleveland 12, Ohio **IEN-0507**

GLASS . . For electronic and electrical applications; properties of 28 types, product examples from fuse bodies to television tubes, notes on use. Bulletin B-88, 8 pages. Corning Glass Works, 1950 Crystal Ave., Corning, N. Y. **IEN-0508**

HANDWHEELS . . Jig and fixture parts including lever arms, clamp assemblies, C-washers, offset handles; captioned pictures. 1952 Catalog, 4 pages. Jergens Tool Specialty Co., 710-14 E. 163rd, Dept. 252, Cleveland 10, Ohio **IEN-0509**

HARD FACING . . Arc welding electrodes to surface parts against impact, abrasion, shock, corrosion, heat; properties, uses. "Murex Hardex", 8 pages. Metal & Thermit Corp., 100 E. 42nd St., 17th Floor, New York 17, N. Y. **IEN-0510**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

If you write maker identify as IEN - 5457

STEEL

VALVES — CONNECTORS — ELBOWS

To Meet Your Exact REQUIREMENTS!

It's easy to get the right shut-off valve or fitting for the job. At your request the Dexter engineering staff will design a unit that will meet your exact requirements. Just send specifications for speedy service.

Made of zinc-plated steel, Dexter shut-off valves and fittings are recommended for use where simplicity, durability, strength, economy is demanded.

Now available in threaded or barbed connections . . . flared or compression type; 1/8 inch pipe to 3/16 inch line. Strainers optional.

30-DAY DELIVERY FROM RECEIPT OF ORDER!

Compare

SEND YOUR SPECIFICATIONS FOR FREE QUOTE TODAY!

Send FREE ILLUSTRATED PAMPHLET
Name
City State
Street

DEXTER AUTOMATIC PRODUCTS, DEXTER, MICH.

If you write maker identify as IEN - 5458

WITH GRIPCO LOCK NUTS

APPLIED FAST! Gripco Lock Nuts are started on the bolt threads *fast* just like a common nut.

LOCK FAST! When the Gripco deflected threads contact the bolt threads, the nut is seated *fast* and locked with a wrench.

HOLD FAST! Until it is removed with a wrench. *Gripco Lock Nuts* can be removed and reapplied many times without appreciable loss of locking effectiveness.

GRIPCO LOCK NUT
make the Bolt-Thread End as secure as the Head End.

GRIPCO PILOT-PROJECTION WELD NUTS
Also *applied fast*. The pilot positions the nut quickly and accurately, and is instantly attached by resistance welding.

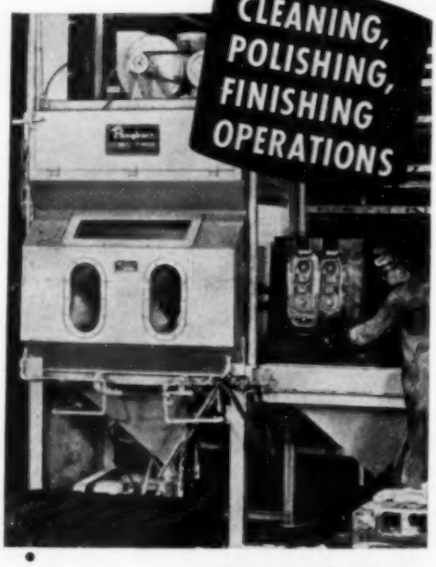
GRIPCO COUNTERSINK WELD NUTS
Weld Fast! The slanting "countersunk" section catches loose metal particles and slides them down the slanting "countersunk" surface away from the threads. No re-threading required!

GRIPCO WELD NUTS *are furnished with either lock or plain thread.*

GRIP NUT COMPANY
310-5 S. Michigan Avenue, Chicago, Ill.

If you write maker identify as IEN - 5459

SPEED UP



Pangborn Hydro-Finish is versatile! Use it to speed up cleaning, polishing and finishing of molds and dies as well as production line work.

Hydro-Finish saves you time, labor and money. Scale and discoloration are removed in *minutes* instead of hours. Cleaned surfaces are virtually free of directional grinding lines. Costly hand work is greatly reduced. No danger of excessive metal removal because tolerances are held to .0001". Fine mesh abrasives suspended in water do a precision job.

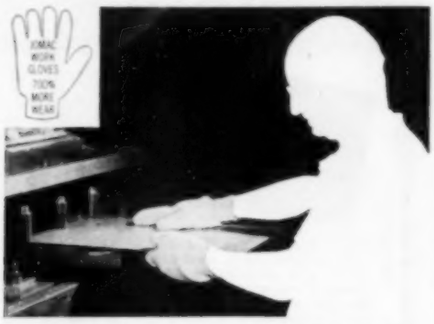
Find out how Pangborn Hydro-Finish improves product quality, increases tool and die life! For full details, write today for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment.

Pangborn

BLAST CLEANS CHEAPER with the right equipment for every job

If you write maker identify as IEN - 5461



NEVER ABSENT WITHOUT NEED

His hands are afforded maximum protection by Jomac Work Gloves. Jomac Gloves resist sharp edges, heat and cold. They help prevent burns, cuts and other injuries that put workers on the absent list. They are washable, flexible, reversible. They resist tearing and snagging.

SPECIFY JOMAC® — THEY GIVE 700% MORE WEAR

Jomac Gloves are made from thick, uncut, twisted loop pile fabric within our own plant. This control of fabric and finished product assures longer wear and better protection. It pays to specify Jomac.

C. WALKER JONES CO.
6135 N. Lambert Street, Philadelphia 38, Pa.

If you write maker identify as IEN - 5462

flamefoil*
finished CANVAS for PROTECTION

RESISTANT to
- FIRE
- WATER
- WEATHER
- MILDEW

Flamefoil canvas gives extra margin of safety against fire in your plant. . . . . reduces your losses.

SEND AT ONCE FOR BOOKLET
"FLAME RESISTANT FABRICS"

*Manufactured under Patents Nos. 2,044,176 and 2,299,612 . . . . . others pending.

FLAMEFOIL GUARDSMEN

PHILADELPHIA TEXTILE FINISHERS, Incorporated
102 LAFAYETTE STREET
NORRISTOWN, PA.

If you write maker identify as IEN - 5463

5 MINUTE SHOP COAT at 1/3¢ per sq. ft.

Link-Belt Co., Philadelphia, protects its product with ROSKOTE Black Shop Coat.

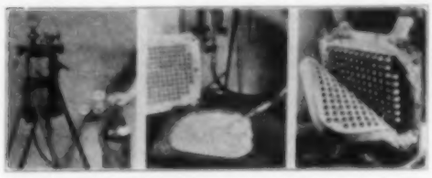
ROSKOTE SHOP COAT dries to a non-tacky film in less than five minutes. It resists corrosion from acids, alkalies and moisture during shipment and storage for 9 to 18 months, depending upon atmospheric conditions. The dried film presents a clean, glossy appearance and will not pick up dust from surrounding contacts. ROSKOTE Shop Coat contains a resin base derived from Roskote, a pyrobituminous organosol. It is supplied in non-pigmented black, or in red, olive drab and aluminum. ROSKOTE may be applied by brush, spray or dip-tank. ROSKOTE covers 600 to 900 square feet per gallon, with the additional important economy of quick handling and removal of the coated part, thus saving valuable time and floor space. ROSKOTE Shop Coat has been approved by the American Iron and Steel Institute, under its JEx Thin Coat Series for Export Shipment. Write for complete information, specifications and prices.

ROYSTON LABORATORIES, INC.
P. O. Box 112, Blawnox, Pa.

If you write maker identify as IEN - 5464

PLASTIC . . Foamed plastisol cures to resilient sponge-like form

Source: ELASTOMER CHEMICAL CORP.
111 E. Centre St., Nutley 10, N. J.



Sample piece upon request

Cushioning products made from a new foamed vinylite plastisol resin are available from the company in desired colors and thicknesses as a sheet pad material or in the form of molded products such as seat cushions and shaped pads. The material is resilient and elastic. It is resistant to oxidizing or hardening and is practically odorless. It is resistant also to flame and aging and is not subject to attack by moistures, alkalis, acids and most chemicals.

It can be laminated to more than an inch in thickness on natural or synthetic fiber textiles or vinylite plastic film and sheeting to form a springy backing for upholstering furniture. It can be cast in open molds to reproduce extremely fine mold detail without applying pressure. It can be formed to sheets of blocks about 8 in. in thickness or area. Foam density can be varied from 12 to 18 lb. per cu. ft. to produce a desired degree of hardness or softness.

Production consists in pouring a compound based upon the resin into a metal cylinder and expanding it by introducing gas under about 400-lb. pressure while agitating the cylinder with a hand crank. The gas forces the expanded material out with a consistency of thick whipped cream. This is poured into an open mold and then cured at about 250 deg. F. in an oven. As the curing proceeds the foam forms a tough skin on its outer surface and can be stripped without difficulty.

If you write maker identify as IEN - 5465

GRINDING . . Surface machine for work measuring to 4 by 10 inches

Source: TECHNICAL DEVELOPMENT CO.
22-A Meredith Road, Philadelphia 31, Pa.

Made in Germany

The spindle in this new surface grinder is mounted on ball and roller bearings in a head that can be set in any vertical position to 7 in. between wheel face and table. Fine adjustment for vertical feed is by a micrometer knob at the upper spindle end. Movement for the wheel over the work is manual or, in one direction, by hydraulic pressure controlled at a valve. Available attachments and accessories include work holders, an exhauster for dry grinding, a motor-driven pump, tank and circulating lines for wet operation. Standard current requirements are met.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 5466

AUTOMATIC HOT START ✓
SILICONE INSULATION ✓
ARC STABILIZATION ✓

you'll find them ALL in A-C WELDERS

Yes, all of these important features contributing to better welder performance and longer welder life are combined in M&T a-c welders.

Automatic "hot-start" means faster welding because it provides correct current surge automatically for any current setting—permits easy arc starting without dialing.

Silicone insulation assures longer welder life, permits more overloading—withstands higher temperatures, moisture, chemical fumes.

Arc stabilization steps up welding speeds, improves quality by guaranteeing a stable arc: eliminating "pop-outs."

A-C welding at its best is available from 30 through 625 amps in the new M&T. Write for literature. Or contact your nearest distributor or M&T Branch.

Contact your local distributor or nearest M&T office.

METAL & THERMIT CORPORATION
100 EAST 42nd STREET • NEW YORK 17, N. Y.

If you write maker identify as IEN - 5467

for your file . . . .
NORTHERN'S LATEST BULLETINS

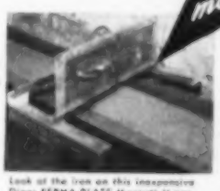
Write to:
NORTHERN ENGINEERING WORKS
2615 Atwater St., Detroit 7, Mich.

For Bulletins
T-105 AH-103 H-111 HL-113 G-700

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 5468

How to guard machinery magnetically



Look at the iron on this inexpensive Dings PERMA-PLATE Magnet! It protects a set of $7,000 rolls. Bulletin on request.

The PERMA-PULLEY for fully automatic iron-removal. Non-electric, no maintenance. Ask for Bulletin.

Protect crushers, grinders, pulverizers, stokers, screens, rolls, knives, pumps against tramp iron . . .

CHANCES are the cotton in your mattress passed over a Dings Magnetic Separator to remove stray iron that would otherwise wreck the bedding manufacturer's garnett rolls . . . your power company protects its coal pulverizers with these magnetic guardians to assure you 24-hour a day service.

Is your plant equipment as well protected? You can *guard it forever* against damage and down-time due to tramp iron with Dings new Alnico magnetic Perma-Pulleys and Perma-Plate Magnets . . . their magnetic permanence is *guaranteed for the mechanical life of the installation.*

Dings Certified MAGNETIC EQUIPMENT

DINGS MAGNETIC SEPARATOR COMPANY
4755 W. Electric Ave., Milwaukee 14, Wis.

If you write maker identify as IEN - 5469

*Reg. U. S. Pat. Off.

If you write maker identify as IEN-5470

Mystik Tapes
...for Industry, for Defense

The toughest, tightest gripping all-around cloth tape ever made. MYSTIK Tape No. 5800C handles protective problems under every condition—water, salt spray, abrasion. Does numerous holding, sealing, identifying jobs. Made to conform with government spec. JAN-P-127, Type I, Grade B.

WRITE for full information and free sample roll to Mystik Adhesive Products, 2644 N. Kildare, Chicago 39, Illinois

If you write maker identify as IEN-5471

HIGH QUALITY—LONG SERVICE

GRAVER

BULK STORAGE TANKS

Since 1857, there has been a Graver Storage Tank to meet each specific need.

Horizontal — to 30,000 gallon capacity
Vertical — to 25,000 gallon capacity
Underground — to 30,000 gallon capacity

Every Graver Tank is all-welded, meets pertinent codes and standards, and is tested and inspected before shipment.

GRAVER TANK & MFG. CO., INC.
EAST CHICAGO, INDIANA
NEW YORK • CHICAGO • PHILADELPHIA • WASHINGTON
DETROIT • CINCINNATI • CATASAUQUA, PA.
HOUSTON • SAND SPRINGS, OKLA.

If you write maker identify as IEN-5472

CHAIN REACTION

We belong to the old school here at Earle. Almost 50 years ago we established our business policy of giving you exactly the kind of gears you want. We have never compromised this policy.

There's a very simple chain reaction from all this. The customers on our books today are a direct result of the good gears we made yesterday. We feel sure that our customers tomorrow will be a direct result of the good gears we make today. THE EARLE GEAR & MACHINE CO., 4707 Stenton Ave., Philadelphia 44, Pa.

EARLE GEARS

It's good business to do business with EARLE

NEW LITERATURE—Continued

HEAT TREATING . . Gas or electric furnaces; descriptions and features on 12 types, data on 4 atmosphere types, specials. Bulletin B-5459, 40 pages. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa. **IEN-0511**

HEATING . . Electric elements for plastic working; specific application examples in bending, forming, drying, molding, laminating. Booklet SP-2506, 24 pages. Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa. **IEN-0512**

INDEXING . . "Hautau-Turndex" automatic indexing table for machine use; description and cut-away view, dimensions, application examples. Bulletin TG, 8 pages. Turner Brothers Inc., 2623-37 Hilton Road, Ferndale 20, Mich. **IEN-0513**

INSULATING . . Electrical insulating papers, pressboard and fibre; properties, grades, test data, available forms and sizes on several types. Catalog, 16 pages. Insulation Mfrs. Corp., 563-67 W. Washington, Chicago 6, Ill. **IEN-0514**

LATHES . . No. 2 turret lathe with 14-in. swing and variable-speed drive; specification table, notes on pushbutton control and equipment. Bulletin 1051, 4 pages. Simmons Machine Tool Corp., 1010 N. Broadway, Albany 1, N. Y. **IEN-0515**

LIGHTING . . "Powerstat" non-interlocking light dimming equipment; models, ratings, typical connection diagrams, dimension drawings. Bulletin D-85-1N, 12 pages. Superior Electric Co., 951 Demers Ave., Bristol, Conn. **IEN-0516**

LUBRICATING . . Bench oilers, flexible-spout units, pump-type oilers, supply cans, special oilers, torches; construction features, sizes. Catalog 100, 8 pages. Gem Mfg. Corp., 1231-41 Goebel St., Pittsburgh 3, Pa. **IEN-0517**

MACHINING . . Boring, broaching, milling, grinding and special machines; illustrated summaries on line of precision equipment, also tools. General Catalog 27312, 32 pages. Ex-Cell-O Corp., 1202 Oakman Blvd., Detroit 32, Mich. **IEN-0518**

MARKING . . Imprinting machines to mark parts, products, packages; picture examples in defense production with notes. Pocket booklet, "Lick the Marking Problem", 12 pages. Adolph Gottscho Inc., 6D Terminal Road, Hillside 5, N. J. **IEN-0519**

METERS . . Galvanometers, dynamometers, dc. indicating amplifiers for null-balance or deflection use; selection notes, models, ratings. Catalog E-ED, 18 pages. Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa. **IEN-0520**

MILLING . . Vertical milling and profile machine; standard specifications, construction features, notes on adjustment, dimensional drawings. "No. 12-M" 8 pages. Morey Machinery Co., 402 Broome St., New York 13, N. Y. **IEN-0521**

MOTOR CONTROL . . Impedance-electronic limit switches for automatic reversal control on planing machine; description, application pictures. Booklet 927, 8 pages. Electric Controller & Mfg. Co., 2704 E. 79th, Cleveland 4, Ohio **IEN-0522**

MOTORS . . Capacitor-type fractional-hp. motors, 50 to 1,800 cycles, also with fans and centrifugal blowers; types, condensed specifications, curves. Folder, 4 pages. Air-Marine Motors Inc., 2183 Jackson Ave., Seaford, N. Y. **IEN-0523**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-5473

FOR PHENOMENAL SAVINGS IN PLANT LAYOUT

TEMPRINTS BLUE PRINTS

FROM LAYOUT TO BLUEPRINT WITH NO DRAFTING

TemPrints are outline prints on transparent film, reproducing to exact scale the standard machines in your plant or made to engineering specifications of your particular equipment . . . TemPrints are also supplied for walls, partitions, windows, office furniture and shipping equipment.
TemPrint Grids are transparent sheets cross-lined to 1/8" or 1/4" scale suitable for layout and floor plans.
When TemPrints are cutout and applied to the grids, the result is an accurate layout of your plant or office. Any number of duplicate prints accurately reproduced in the same size may then be made by processing through an Ozalid machine.

SIMPLY MAKE THE LAYOUT — AND THE LAYOUT WILL MAKE YOUR PRINTS
TEMPRINTS PUT THE PLAN INTO YOUR PLANT

MARINE SCALE INDUSTRIAL MODELS

Marine has specialized in scale models for many years. Marine Miniatures are accurate reproductions to scale of well-known plant machinery and equipment. All models are dimensionally accurate — may be identified instantly. A special catalog is available on request.

SEND FOR COMPLETE ILLUSTRATED CATALOG TODAY!

HARMAN ASSOCIATES
Dept. N-3, Holaslte, L. I., N. Y.

If you write maker identify as IEN-5474

Before you select a Temperature Regulator, compare low-cost Stacon with the rest. No other regulator has as many features or offers as many advantages as a Farris Stacon.

PROVE IT!

Make this Chekchart Test

	Farris Stacon	Air Operated	Self Operated
• Dirt Proof — Hermetically Sealed?	Yes		
• Extreme Accuracy?	±1°		
• Packing or Glands to Leak?	No		
• Drop-tight Shut off?	Yes		
• Vapor-steam Energized Super Power Pilot?	Yes		
• Supervision—Maintenance?	None		

Write for Stacon Bulletin 50-1000. It contains complete information on the most sensitive, accurate, economical temperature regulator available . . . anywhere.

Farris Stacon Corp.
232 COMMERCIAL AVE. PALISADES PARK, N. J.

If you write maker identify as IEN-5475

Armstrong's
VIBRACORK CUSHIONS VIBRATION

from Hydraulic Presses, Pumps, Compressors, and many other types of Machinery and Equipment

. . . ACTUALLY FLOATS THE LOAD ON MILLIONS OF AIR CELLS!

Vibracork is a resilient machinery isolation cork plate made of pure cork granules, compressed and baked under pressure.

Convenient to stock — Standard sheets, 12" x 36"; Standard density 2" and 3" thick; Heavy density, 1", 2" and 3" thick.

Easy to use — Can be cut to size on the job with an ordinary hand saw.

Loading range — Standard density, 1500# to 4000# per. sq. ft.; Heavy density, 5700# to 8500# per. sq. ft.

Availability — Immediate delivery. Korfund is sole distributor for the United States.

For installation data and further information, ask for Bulletin VC-500.

THE KORFUND CO., INC.
KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK
48-35 E Thirty Second Place • Long Island City 1, N. Y.

If you write maker identify as IEN-5476

This New Book
HELPS YOU IMPROVE MILLING MACHINE PERFORMANCE

896 pages of text...200 Formulae...700 Illustrations and Charts...6¼" x 9¼" case bound.

PRICE $8.00

Everyone interested in metal-working should have a copy because it's the most informative book ever written about milling and milling machines. Covers the entire field from elements of machine construction to the economics of replacement. Fill in the coupon and mail it today. Enclose check or purchase order. THE CINCINNATI MILLING MACHINE CO., CINCINNATI 9, OHIO.

THE CINCINNATI MILLING MACHINE CO.
DEPT. EN, 4701 MARBURG AVE., CINCINNATI 9, OHIO
Please send _____ copies of "A TREATISE ON MILLING AND MILLING MACHINES" at $8.00 each (postage, sales and local taxes included).
NAME _____ (Please Print)
COMPANY _____
STREET AND NO. _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN-5477

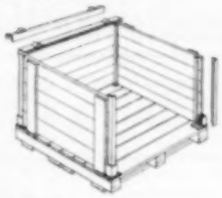
NOW—practically ANYTHING can be palletized

K-D Stacking Box
. . . a PALTIER Job Tool
for storage and shipment

Interlocking side panels.

Structural angle posts slip-fit into sockets.

Angle cross bars with alignment angles and end closures slip-fit over posts to support box above.



The **PALTIER** heavy duty K-D Box is one of the most versatile products to be developed for materials storage and shipping. It can be used as a shipping and tiering box, tiering open front bins, tiering shelves with sides only, or simply as a heavy duty tiering pallet. It takes loads up to 4000-5000 lbs. and is easily knocked down and bundled for shipping.

Quickly assembled with no tools whatever by simply inserting the structural angle posts into the corner angle sockets, slipping the sides into place and fitting angle cross bar over top.

Supplied in any size and capacity. Prompt shipment.

Write for complete details

THE PALTIER CORPORATION
1701 KENTUCKY STREET • MICHIGAN CITY, INDIANA
DISTRIBUTORS IN PRINCIPAL CITIES

If you write maker identify as IEN-5478

If you write maker identify as IEN-5480

REFRIGERATING . . Sub-zero machine to shrink, stabilize, test and store

Source: DEEPFREEZE DISTRIBUTING CORP.
3932 Reading Road, Cincinnati 29, Ohio

A little under $3,000

Two compressors serve the 18 by 22 by 24-in. refrigerating compartment in this new Model W-120 refrigerating equipment. It is a smaller companion unit to the equipment previously described IEN-1283-51. The chamber is insulated with 4 in. of Santocel. Temperatures can be held down to minus 120 deg. F.

Automatic control starts at minus 90 deg. F. Thermal capacity is 500 btu. per hour at minus 120 deg. F. when the work is immersed in a convection fluid in the chamber. Overall dimensions are 72 by 27½ by 36 inches. Operation is on 220-volt single-phase 60-cycle ac. Weight is 1,050 pounds.

If you write maker identify as IEN-5481

CLEANING . . Hand cream for use on worker's hands and arms

Source: KHEMO-KLEAN CO.
3263-67 S. 9th St. E., Dept. B-14, Salt Lake City 5, Utah

Single quart lists at $1

A small quantity of this new jelly-like cream is rubbed on the hands and arms to cause its solvent emulsion to disperse, liquefy, penetrate and "lift" embedded dirt from the skin surfaces. The loosened soil and cream can be wiped or washed off to leave the skin clean and soft. The cream contains no harsh ingredients. It acts as an antiseptic. It will remove stains, grease and grime, oil paint, carbon, tar, emery dust, adhesives. A 2-lb. quart can will provide about 400 washings at a list price of $1.

If you write maker identify as IEN-5482

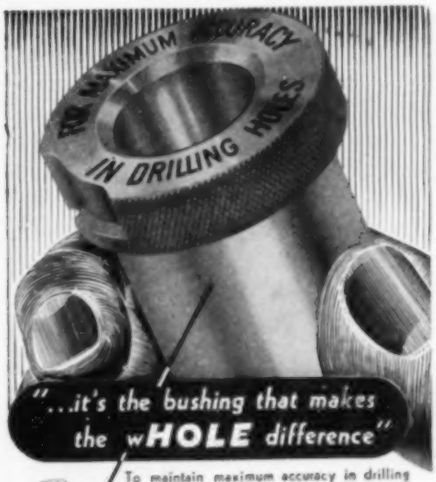
DISPENSING . . Lever operated unit for self-adhesive tape is adjustable

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

Tape length from 1 to 4 in. can be pulled from a 2,600-in. roll and cut off by operating the lever on this new Model-92 definite-length machine. It is designed for rolls of tape 1 in. in width. Weight is 6 pounds. Applications are in packaging lines and in shop departments for labeling, identifying. List price of the new unit is $14.75.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-5483



To maintain maximum accuracy in drilling operations, use the bushing that's precision made for the job...use Acme. Write for catalog.

Acme Industrial Company
Makers of Hardened and Ground Precision Parts
215 N. LAFLIN STREET • CHICAGO 7, ILLINOIS
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

If you write maker identify as IEN-5484

use CHAMPION AIR HOSE REELS
to increase production and shop safety!

Champion Air Hose Reels put air lines within arms reach of the worker, yet keep hose off the floor to prevent accidents. They can be mounted conveniently on ceilings, walls or floors. They are totally enclosed — free from dust and grime. Inside sheaves prevent kinking — over 30 feet of special spring steel rewind hose at a governed speed. There are 4 stops to a complete circle so that just the needed amount of hose is exposed — hose is extra tough 2 braid for long hard usage. All connections are air-tight, non-leaking. Write TODAY for complete data and a FREE copy of the Champion Manual that contains valuable data on handling compressed air.

CHAMPION PNEUMATIC MACHINERY CO.
844 N. Pleasant Street — Princeton, Illinois
AIR HOSE REELS • AIR COMPRESSORS • AIR ACCESSORIES

If you write maker identify as IEN-5485

production flows smoothly...
at top speed, at all times, yet free of rejects

Kester makes 62 different fluxes to meet any requirements. Why not write our Technical Department for full information?

KESTER SOLDERING FLUX

KESTER SOLDER COMPANY
4275 Wrightwood Ave., Chicago 39
Newark 5, N. J. • Brantford, Canada
KESTER SOLDER

If you write maker identify as IEN-5486

If you write maker identify as IEN - 5487

INDUSTRY HAS NEVER SEEN ANYTHING LIKE IT!

LAVELLE 40th ANNIVERSARY ISSUE

Characteristics And Recommended Usage For Natural And Synthetic Rubber Polymers, And Complete Design Data On Mechanical Rubber Specialties!

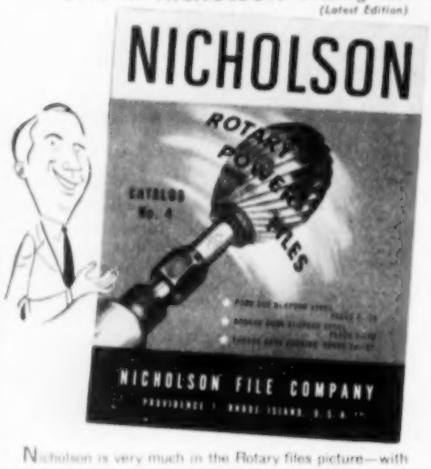
60 PAGES

LAVELLE Rubber Company

1811 WEST HUBBARD STREET, CHICAGO 22, ILLINOIS

If you write maker identify as IEN - 5488

Know the NICHOLSON Rotary line
Send for NICHOLSON Catalog No. 4
(Latest Edition)



Nicholson is very much in the Rotary files picture—with a complete assortment of types, shapes and sizes . . . all designed and manufactured in the Nicholson tradition for

LONG-LASTING QUALITY
TRUE-CENTER ACCURACY
FAST-CUTTING SPEED

SOLD THROUGH INDUSTRIAL DISTRIBUTORS

If you write maker identify as IEN - 5489

THE EASY WAY TO TELL!

Changeable Letter Bulletin Board
"The message you want—when you want it"

DAV-SON INDUSTRIAL BULLETIN BOARDS

Employee bulletins, safety messages, production records all get maximum attention when you use DAV-SON Bulletin Boards. There is a DAV-SON Bulletin Board for every purpose.

- Changeable Letter Boards
- Cork Back Pin-Up Boards
- Indoor and Outdoor Types
- Metal or Hardwood Frames
- With or Without Locking Glass Doors
- Illuminated and Non-Illuminated
- Special Safety Displays
- Single and Multiple Panels

Cork Back Boards. For letters, photos, posters, etc.

Write for complete information regarding your requirements.

DAV-SON A. C. DAVENPORT & SON, INC.
ESTABLISHED 1922
311 N. DESPLAINES ST., CHICAGO 6, ILL.
MANUFACTURERS OF BULLETIN BOARDS FOR EVERY USE

NEW LITERATURE—Continued

NEW PRODUCTS . . Offer of assistance in product design and manufacture; facilities in metal working, plastics, glass, ceramics. "How Emhart Can Help", 12 pages. Emhart Mfg. Co., 331-35 Homestead Ave., Hartford 2, Conn. **IEN-0524**

PAINTING . . Electro-formed production spray-painting masks; sectional views on three basic types, fixtures, handling devices. "Spraying Masks", 6 pages. Conforming Matrix Corp., 30 Toledo Factories Bldg., Toledo 2, Ohio **IEN-0525**

PLASTICS . . Fluorocarbon molding powder, dispersions, oil, wax, grease; properties, other forms available, picture examples of use. Bulletin, "Facts about Kel-F", 4 pages. M. W. Kellogg Co., P. O. Box 469-A, Jersey City 3, N. J. **IEN-0526**

PLASTICS . . Molded parts made of nylon; application stories on several specific examples in product design, notes on performance. Bulletin, 4 pages. Nylon Molded Products Corp., 352 Thomas St., Garrettsville, Ohio **IEN-0527**

PLASTICS . . Fluorocarbon rod, sheet, tube and parts based on Teflon and Kel-F; properties and applications. Compar, silicone rubber. Folder, "Fluoroflex", 4 pages. Resistoflex Corp., 35-39 Plansoen St., Belleville 9, N. J. **IEN-0528**

PLASTICS . . Laminated sheet, rod, tube; specifications on NEMA and other grades, sizes, tolerances, fabrication, uses. "Laminated Insurok", letterhead request, 20 pages. Richardson Co., 2765 W. Lake St., Melrose Park, Ill. **IEN-0529**

PRESS TOOLS . . Magnesium safety tongs to handle work into and out of a press or shear, will crush if caught; types, sizes, notes on their design. Leaflet, "Safety Tongs", 2 pages. Magline Inc., 1930 Mercer St., Pinconning, Mich. **IEN-0530**

PRESSES . . Picture review on mechanical and hydraulic presses, feeds, special machines, as examples of some 1,000 standard models. Catalog 35-C, 28 pages. E. W. Bliss Co., 1373-77 Raff Road, S. W., Canton 10, Ohio **IEN-0531**

PROCESSING . . Drying ovens, air heaters, paint spray booths, parts washing machines; picture review on models to show scope of facilities. Bulletin, 12 pages. Burdett Mfg. Co., 3431-35 W. Madison St., Chicago 24, Ill. **IEN-0532**

PROTECTING . . "Bee Brand" work gloves in leather, leather-palm, flannel, jersey construction; illustrated types, selector chart. Catalog 52, 8 pages. Richmond Glove Corp., 605 North "D" St., Richmond, Ind. **IEN-0533**

PUMPS . . Small rotary units, listed in a selection table by type of service, capacity, packing, mounting method and features. Pocket Folder 254, "Pump Guide", 6 pages. Tuthill Pump Co., 937 E. 95th St., Chicago 19, Ill. **IEN-0534**

PUNCHING . . Guillotine-type machine to punch flanges and webs of beams; description and ratings on three models of 150 to 350 ton, spacing table. Folder B-800, 4 pages. Beatty Machine & Mfg. Co., Oak & 150th, Hammond, Ind. **IEN-0535**

RECORDING . . Boundary-displacement magnetic recording equipment; schematic on method, notes on characteristics. Bulletin PX-29678, 4 pages. Engineering Research Associates, 1900-4 W. Minnehaha, St. Paul, Minn. **IEN-0536**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as IEN - 5490

Compare this Toledo No. 999 gear-train with others in portable 2" pipe machines and you will appreciate Toledo's superiority! It's *your* money you are spending. Get Toledo value! Wheel or knife cut-off. High production, dependable...ask your distributor. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

TOLEDO
PIPE TOOLS . . . POWER PIPE MACHINES

If you write maker identify as IEN - 5491

Are YOU getting BURNISHING results like these?

A MANUFACTURER OF AIRCRAFT INSTRUMENT PARTS uses Oakite Composition No. 3 in all tumbling and burnishing barrels. Results are splendid on castings, stampings and machined parts . . . "Steel gear plates look like mirrors. Pinions are polished to the roots of the gears. Magnesium parts are brilliant" . . . "Oakite Composition No. 3 is here to stay."

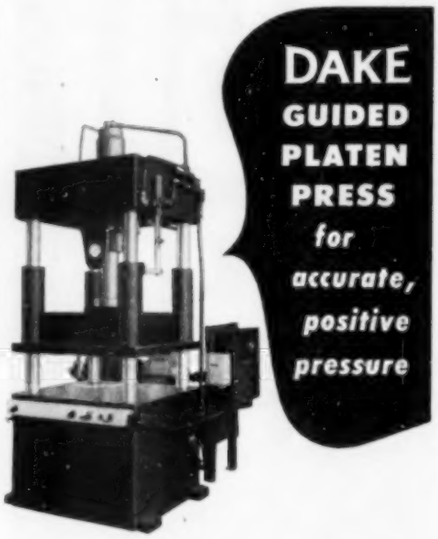
For burnishing steel, stainless steel, brass, aluminum, magnesium, lead alloys, zinc alloys and other metals . . . Oakite Composition No. 3 gives RICH SUDS in hard or soft water; LUBRICATES SMOOTHLY to prevent metal-on-metal scratching; RINSES FREELY leaving no soapy film on work, balls or stones; IMPROVES LUSTER quickly at low cost per unit.

For FREE BULLETIN giving interesting facts about OAKITE COMPOSITION NO. 3, write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

If you write maker identify as IEN - 5492



Here is a press specially engineered to the requirements of an aircraft engine builder. It is a 75-ton, 4-post, double-acting platen press, powered hydraulically and equipped with J. I. C. electric controls.

This press will be used for testing and inspecting aircraft engine cranks. It is equipped with a special timing device arranged so that the ram advances quickly almost to contact, then advances under full power until a pressure of exactly 52 tons is exerted on the work. After this pressure has been held two minutes, the pressure is released automatically and the ram returns to starting position.

Dake Guided Platen Presses, like other Dake Presses, can be engineered to your particular requirements. They are available in capacities up to 300 tons. We will gladly work with you in developing whatever special press equipment you need.

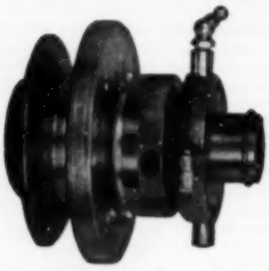
DAKE PRESSES

DAKE ENGINE COMPANY
614 Seventh St.
Grand Haven, Mich.

If you write maker identify as IEN-5494

NEW DISC CLUTCH

for gasoline engines, electric motors, speed reducers, etc.
operates with light pressure
picks up load without grab



integral V-belt pulley

integral sprocket

cut-off coupling or sleeve

easy manual operation

adjustable

powerful

For stub or through shaft application, these new Type K clutches — rated up to 3 H.P. at 100 r.p.m.—have generous safety factors throughout to stand severest service. Threaded steel adjuster permits precise easy adjustments to assure maximum capacity and minimum engaging pressure. Clutch locks itself in engaged position.

Write for new descriptive Bulletin K-1, including complete specifications.

THE EDGEMONT MACHINE CO.
2200 HOME AVENUE • DAYTON 1, OHIO

If you write maker identify as IEN-5495

A FAST WAY TO REDUCE COSTS

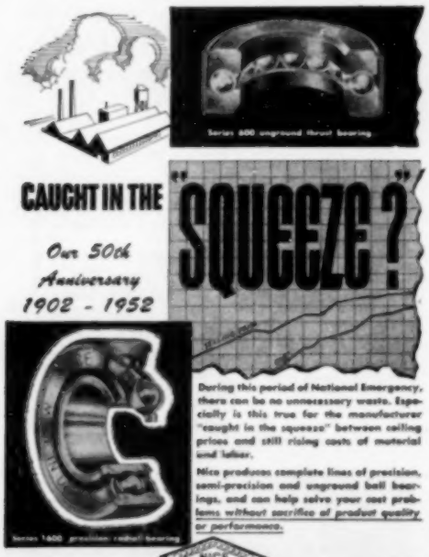
Capacities from ½ to 1 ton
110, 220 or 440 volts

Hundreds of plants are cutting overhead with the CM COMET . . . a sturdy, high-speed, portable electric hoist. All working parts fully enclosed and permanently lubricated. Don't buy until you see the CM COMET. Ask your local distributor for a demonstration.

Write for Bulletin 138
Get all the facts

CHISHOLM-MOORE
HOIST CORPORATION
Affiliated with Columbus McKinnon Chain Corporation
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland • San Francisco • Los Angeles

If you write maker identify as IEN-5496



CAUGHT IN THE "SQUEEZE?"

Our 50th Anniversary 1902 - 1952

During this period of National Emergency, there can be no unnecessary waste. Especially is this true for the manufacturer "caught in the squeeze" between ceiling prices and still rising costs of material and labor.

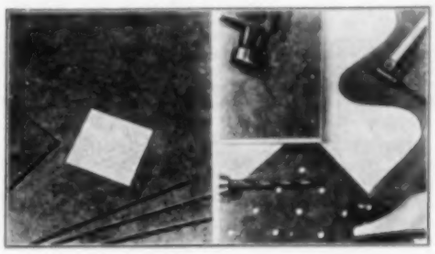
Nice produces complete lines of precision, semi-precision and unground ball bearings, and can help solve your cost problems *without sacrifice of product quality or performance.*

NICE BALL BEARING COMPANY
NICETOWN PHILADELPHIA PENNSYLVANIA

If you write maker identify as IEN-5497

HARDBOARD . . For product use and for construction, two grades

Source: OREGON LUMBER CO.
352 Thomas St., Dee, Oregon



Sample pieces upon request

The company announces production in its new plant of its Allwood hardboard in standard sizes and thicknesses and in tempered and standard grades. The board employs the natural waxes and resins of the original slabwood. Laboratory tests indicate that the finished material will exceed industry requirements for strength, water absorption, swelling and specific gravity. The tempered grade is being produced for hard surface and exterior use. Both grades are supplied with one smooth surface and, in tempered form, can be used for linoleum base with the screened side up for good adhesion.

Product applications include manufacture of table tops, cabinet doors, radio and television cabinet backs, furniture panels, all calling for a strong light-weight board that can be sawed, routed, nailed, drilled or planed without danger of shredding, chipping or splitting. Construction applications include use in concrete forms and in both sub and top flooring.

If you write maker identify as IEN-5498

PIPE . . Flexible extruded plastic, ¾ to 6 in., particularly for water

Source: CARLON PRODUCTS CORP.
10225 Meech Ave., Cleveland 5, Ohio

An underground job

Type WS is a recent addition to the company's line of rigid and flexible plastic pipe. It is similar to Type EF, previously described IEN-142-50. It is particularly suited for water-service, for natural gas and for application in disposal lines in strip and pit mines and in sand and gravel pits. It can be curved to follow irregular contours. It differs from Type EF in its greater wall thickness for protection against bursting or collapse when handling pressure or vacuum.

The smallest ¾-in. size is rated at 120-lb. pressure at 120 deg. F. It weighs 0.216 lb. per ft. and is supplied in 400-ft. coils. The largest 6-in. pipe is rated to 75 lb. at 120 deg. F. It is supplied in 25-ft. straight lengths weighing 5 lb. per foot. Plastic-to-plastic or plastic-to-metal connections can be made with fittings the company is prepared to supply.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

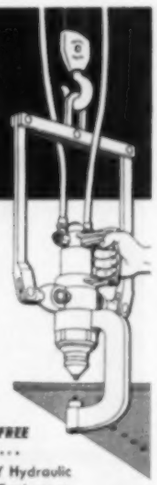
If you write maker identify as IEN-5499

Here's the Answer to Low Cost Hole Piercing

DANLY

PORTABLE HYDRAULIC PIERCING UNITS

- ✔ Cylinder capacity 12½ tons!
- ✔ Built-in hydraulic stripping action
- ✔ Compact for portability and flexibility of application



SEND FOR THIS FREE BULLETIN NOW . . .
See how DANLY Hydraulic Metalworking Equipment Solves your specific problems!

DANLY MACHINE SPECIALTIES, INC.
2140 South Laramie Avenue
Chicago 50, Illinois

If you write maker identify as IEN-5500

Only P&H Welders have this feature

for faster, easier, sounder welds on non-ferrous and "hard-to-weld" metals

No other welder has this Instantaneous Control feature. It lets you handle "hard-to-weld" metals with ease—aluminum, magnesium, brass, copper, stainless, high alloy, high and low carbon steels. Check these features:

- **P&H Dial-Istric Control** — No moving coils or cores to bind or freeze. Maintenance is absolutely negligible.
- **Built-in high frequency unit** — eliminates additional external equipment. Variable frequency control.
- **Automatic gas and water control** — Pre-set automatic time delay control (2 seconds to 2 minutes) prevents electrode contamination, assures clean, sound welds.
- **Stepless amperage regulation** — from 10 amps to maximum. Three models available — ranges 200, 300 and 500 amps.
- **Unusual arc stability** — Makes good clean welds where extremely low amperages are required.
- **Selector switch** gives operator instant choice of standard or high frequency unit.

No wonder P&H AC Welders are the choice of the aircraft industries where top quality work and speed are "musts". They join "hard-to-weld" metals faster and easier — eliminate rejects for you, too. Get full details from your P&H representative or write us for further information.

WELDING DIVISION
P&H HARNISCHFEGER CORPORATION
4400 W. NATIONAL AVENUE
MILWAUKEE 14, WISCONSIN

Power Shovels • Crawler and Truck Cranes • Overhead Cranes • Hoists • Arc Welders and Electrodes • Soil Stabilizers • Diesel Engines • Pre-Fabricated Homes

If you write maker identify as IEN-5501

CLANCY SURE-GRIP HOSE CLAMPS

Can be Reused

. . . can be removed and replaced time after time without injury to the hose, clamp, nut or bolt.

Clancy Sure-Grip Clamps keep their shape, hold any pressure the hose will stand. All parts separately galvanized — no rough edges, won't rust or stretch. For air, gas, water or steam. Every size to fit any hose — foreign or domestic. Write for prices.

Clancy steel clamps won't rust on . . . are easy to remove.

Merely loosen nut and bolt and remove.

Replace and tighten. Perfect circle assures uniform fit.

J. R. CLANCY INC.
1008 W. Belden Ave.
SYRACUSE 4, N. Y.

If you write maker identify as IEN-5502

UNIVERSAL INDUSTRIAL CONVEYOR

Low First Cost . . . .
Low Maintenance

Illustrated is model for punch press operation. Other models designed to meet a wide range of conveyor problems.

Furnished in 5 lengths—8, 12, 16, 20 and 24 feet.

Literature and estimates on request.

- Removable sides to permit handling large cartons or parts.
- Motor totally enclosed inside conveyor body easily accessible through removable ventilating panel.
- Elevates to desired height with simple hoisting mechanism.
- Driven by means of roller chain to roller bearing equipped gear box.
- Main drive shaft and idler pulley operate on double-sealed ball bearing.
- Standard belt width, 12 inches. Other widths can be furnished to meet your requirements.
- Belt speed, 74 F.P.M.—adjustable if desired.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

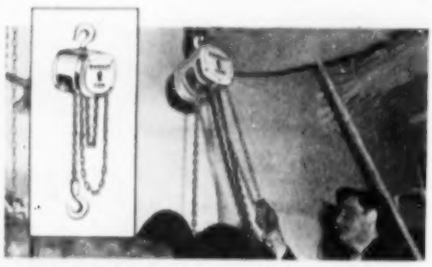
If you write maker identify as IEN-5503

There's no waste with Gold Seal Tape. Production is laboratory-controlled to assure *lasting* "tack" in the adhesive compound. It tears evenly, won't dry out, peel, or ravel. Every roll is cellophane-wrapped to keep it *factory-fresh* until ready for use. So get Gold Seal. Get the handy 10-roll container—it's your smartest buy for shop supply. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

JENKINS Gold Seal Tape
FRICTION RUBBER

MADE BY JENKINS BROS MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN-5504



DOES MORE SPOT LIFTING . . . EASIER

Work pops up all over for a hand hoist that's easy for one man to lift, carry, hung up by himself, and use. No wonder the 'Budgit' Aluminum Chain Block is such a favorite. The ¼-ton size weighs only 29 lbs. and lifts capacity load with a chain pull of 25 lbs. All sizes — ½, 1 and 2 tons — are one-man hoists.

Handle all spot-lifting jobs easier, faster by using a tough, economical 'Budgit' Chain Block. Spur gears assure top efficiency. Automatic load brake; spline fastenings, and overcapacity load chain and hooks safeguard man, load, and hoist. Bulletin No. 398 gives complete facts. Write for a copy.

'Budgit' CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Saw-Bar" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting Specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, and "American" Industrial Instruments.

If you write maker identify as IEN-5505

You need this Carey Reference Manual

for Asphalt
Asbestos • Magnesia Products

Send today for your FREE copy of this new Carey Reference List. It's designed to save you time in matching products to specifications—and vice versa. No industrial executive, designer, engineer or architect should be without it. Just fill in coupon and mail today for your FREE copy. No obligation!

THE PHILIP CAREY MFG. CO.
CINCINNATI 15, OHIO.

Carey

The Philip Carey Mfg. Co.,
Cincinnati 15, Ohio, Dept. IE-5

Gentlemen: I want a FREE copy of the Carey Reference List for Asphalt, Asbestos and Magnesia Products.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

NEW LITERATURE—Continued

REFRACTORIES . . For boiler setting: information on plastic and castable types, furnace wall construction, estimating and performance data. "Boiler Settings", 24 pages. Ramtite Co., 2561-65 W. 18th St., Chicago 8, Ill. **IEN-0537**

RESISTORS . . Variable units for military products; types, JAN numbers, performance characteristics and ratings, dimensions. Data Sheet 160, 4 pages. Chicago Telephone Supply Corp., 1140-44 Beardsley Ave., Elkhart, Ind. **IEN-0538**

RHEOSTATS . . Tubular slide-contact type, 60 to 1,000 watts; types, wattage ratings, resistance values, dimensions, modifications. Catalog 5, letterhead request, 16 pages. Rex Rheostat Co., P. O. Box 232-A, Baldwin, N. Y. **IEN-0539**

ROUTING . . Portable units, based on air-turbine motor, for wood, plastics, metal; motor details, attachments, illustrated examples of work. Bulletin 1138, 8 pages. Onsrud Machine Works, 3960 Palmer, Chicago 47, Ill. **IEN-0540**

RUBBER PRODUCTS . . Made to specification in natural and synthetic rubber; picture examples by application, available compounds, properties. Catalog 51, 32 pages. Acushnet Process Co., 760 Belleville Ave., New Bedford, Mass. **IEN-0541**

SCREENING . . "Low-Head" gyratory sifter for separating two to eight material sizes in one operation; construction, screen data, uses. Bulletin 07-B-6124B, 8 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-0542**

SEALING . . Accordion-type neoprene sleeves and boots to keep dust and dirt away from moving parts; stock sizes, other sleeve types, connectors. Bulletin AH-2, 4 pages. A & A Mfg. Co., 2015-19 W. Clybourn St., Milwaukee 2, Wis. **IEN-0543**

SEALING . . "Palmetto G-T" ring packing for rods and pistons to 15,000 lb.; action under pressure, installation steps, recommended dimensions. Bulletin MP-68, 8 pages. Greene, Tweed & Co., 342 Elm Ave., North Wales, Pa. **IEN-0544**

SEPARATING . . "Hi-eF Purifier" for steam, vapor, air lines, ½ to 2 in.; operation, application suggestions, sizes and list prices on six models. Bulletin 500, 6 pages. V. D. Anderson Co., 1931 W. 96th St., Cleveland 2, Ohio **IEN-0545**

SPRAYING . . Nozzles for process and air-conditioning use; types, spray patterns, recommended uses, capacity tables, dimensional drawings, accessories. Catalog 31, 12 pages. Delavan Mfg. Co., 3007 Sixth Ave., Des Moines 13, Iowa **IEN-0546**

SPRINGS . . Compression, extension, torsion and flat; picture examples, also wire forms, retaining clips; notes on facilities, specials. Folder, "Springs," 4 pages. Connor Spring Mfg. Co., 228-32 Natoma St., San Francisco 3, Calif. **IEN-0547**

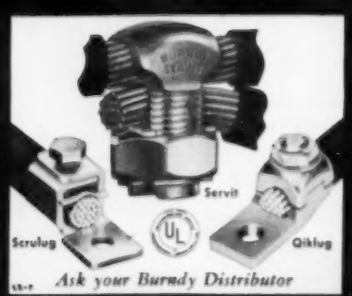
SPRINGS . . Clock springs for a variety of products; details on spiral, cross-curved, flat reversed tempered units. "Springs for Dual Power," 20 pages. Sandsteel Spring Div., 143-47 Hudson St., New York 13, N. Y. **IEN-0548**

STORING . . Steel racks to store drums, barrels, crates, pallets; illustrated models, application suggestions, notes on engineering service. Bulletin 5221, 12 pages. Barrett-Cravens Co., 4609 S. Western Blvd., Chicago 9, Ill. **IEN-0549**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5506

THE 'BIG 3'



Ask your Burndy Distributor

BURNDY
NORWALK • CONNECTICUT

If you write maker identify as IEN-5507

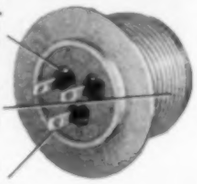
CANNON PLUGS | hermetically sealed

Cannon Type "GS" (glass sealed) connectors are hermetically sealed for use on position indicators, tachometers, and other instruments that must be sealed to avoid moisture condensation resulting from sudden altitude change or other causes.

Glass beads fused to shell and contact, have approximately same coefficient of expansion as steel shell, insulate contact and provide perfect seal.

Shell machined from cold rolled steel. Hot tin dip is standard finish. GS02 is receptacle type; GS06 plug with coupling nut.

Contacts machined from cold rolled steel. Flat eyelet at wire end is standard. Solder cup type contact available on special order.



Dept. E-112

Request Bulletin No. GS-2 for engineering data.

CANNON ELECTRIC

3209 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

If you write maker identify as IEN-5508

Test for Electrical
LEAKAGE • SHORTS • BREAKDOWN
with
"HYPOT"
JUNIORS

HIGH POTENTIAL TESTING INSTRUMENTS

WRITE FOR BULLETIN 4A

- ONLY ONE instrument necessary to make high potential tests for leakage, breakdown or shorts!
- PORTABLE, with rugged steel case. Operates in any position!
- SAFE to use, with protected test leads, shielded high voltage, grounded case!
- SIMPLE—only three easy steps to make a complete test!
- VISUAL INDICATIONS from neon lights give positive test results. Audible test indication for leakage also available.
- RANGES 0-1500 to 0-6000 V.A.C. output. Other "Hypots" to 50,000 V.A.C. output at 5 K.W.
- WRITE for complete data on "HYPOTS" for your jobs.

ASSOCIATED RESEARCH, Incorporated

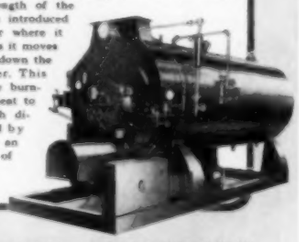
3762 West Belmont Avenue • Chicago 18, Illinois

If you write maker identify as IEN-5509

3=5 when you use CYCLONIC COMBUSTION

Yes, 3 square feet of heating surface with Cyclonic Combustion equals 5 square feet of heating surface offered to you by other packaged boiler units.

The Cyclotherm Cyclonic Combustion Principle is an entirely new and amazingly different method of heat transfer in the boiler industry. Air enters the combustion chamber at extremely high velocity in a revolving spiral vortex which travels the entire length of the furnace. The fuel is introduced into the entering air where it is slowly consumed as it moves in a cyclonic motion down the combustion chamber. This highly luminous slow burning flame radiating heat to the fire tube through direct radiation and by convection, results in an unusually high rate of heat transfer.



Boilers are designed for oil or gas operation from 10 through 500 HP. 15 to 200 lbs. operating pressure. Full power operation from a cold start in 10 to 20 minutes. Savings up to 50% on maintenance. Guaranteed 80% efficiency.

CYCLOTHERM steam generators
CYCLOTHERM DIVISION UNITED STATES RADIATOR CORP.

CYCLOTHERM, DEPARTMENT 29, OSWEGO, NEW YORK

If you write maker identify as IEN-5510

CLARK TYPE "CY" AC MOTOR STARTERS

with the new arc quenching principle

in enclosures to meet every industrial requirement

These new starters are available in enclosures approved for use in such industrial atmospheres as hazardous gas, dust or excessive humidity.

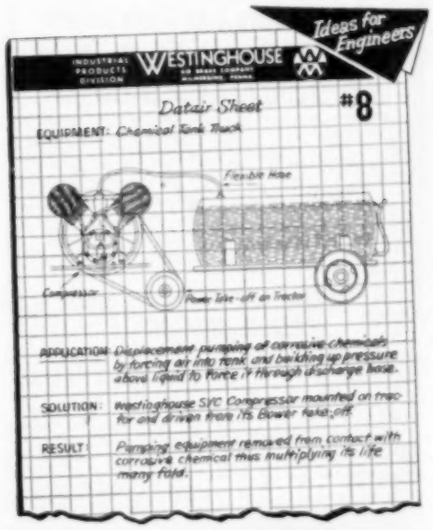
Illustrations show—left above, Type IV, water-tight; left below, Type VII, for hazardous gas locations; right above, Type V, dust-tight; right middle, Type IX, for hazardous dust locations; right below, Combination Starter in Type IX explosive resisting enclosure.

CLARK Type "CY" starters with low maintenance assure more continuous production.

THE CLARK CONTROLLER CO.

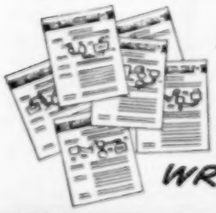
EVERYTHING UNDER CONTROL • 1146 EAST 152nd STREET, CLEVELAND 10, OHIO

If you write maker identify as IEN-5511



So often AIR Solves the Control Problem!

In case after case, Plant Engineers are using W A B Pneumatic devices to solve control problems. The case presented above is an example. Our Engineering Data File provides information concerning this and many others. Sections of it may be applied to your problems. Write for a complete file. No charge.



FREE

This Engineering Data File

WRITE

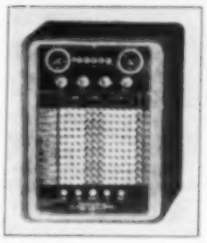
INDUSTRIAL PRODUCTS DIVISION WESTINGHOUSE AIR BRAKE COMPANY WILMERDING, PENNA.

Factory Branch: EMERYVILLE, CALIF.
Distributors throughout the United States . . . Consult your Classified Directory. Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario.

If you write maker identify as IEN-5513

TIMING . . Push button selector sets intervals in an operation sequence

Source: HENRY G. DIETZ CO.
12-16 Astoria Blvd., Long Island City 2, N. Y.



Components are standard

Push buttons are assembled to select desired conditions accompanied by various time intervals in one or any required number of cycles by this new Timel Operations Preselector. Each horizontal line of buttons represents a single cycle. Succeeding lines cover a sequence. The push buttons select circuits representing multiples of a repetitious impulse originated by a synchronous motor driving a contact mechanism.

Control circuits are closed or opened as the selected multiple corresponds to the accumulating impulse count. The equipment is available to specification. It employs standard components that can be put together in an essentially unlimited number of combinations.

The unit shown in the illustration is used on laundry machinery to select high, medium or low water temperature, low, medium or high water level and any one of five time intervals. Each line includes a drain interval and a filling interval of predetermined amount.

A reset button can be pressed to return the cycle to its starting position at any time. A dump valve opens on the last minute of each cycle for this particular unit and the cycle itself is adjustable to a maximum of 15 minutes.

If you write maker identify as IEN-5514

GAGE . . Multiple pneumatic unit for 100 per cent crankshaft inspection

Source: SHEFFIELD CORP.
719-23 Springfield Ave., Dayton 1, Ohio

Dimensions at a glance

Main bearings on a crankshaft are gaged for size and taper, for pilot-hole diameters, for flange diameters and run out, for thrust-bearing faces, keyway locations and any other points as specified by the user with this new multiple assembly of the company's Precisionaire pneumatic gage. It is initially set up to a master and limit markers are positioned on the indicator chart at the top of the housing. The inspection operation can then be handled without particular need for skill.

The work piece is placed in a loading cradle where it is held up above the gaging elements and a hand lever is operated to lower it hydraulically into gaging position. Dimensions can be read at any set position. The work can be revolved on rolls to gage concentricity and run-out. When the readings have been completed the hand lever is again operated to raise the work for free removal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-5515

Pannier Steel Stamps

LAST LONGER . . . MARK BETTER

7 REASONS WHY:

1. High tensile tool steel, for durability.
2. Roundedhead distributes hammer blows more evenly for better impressions, less "mushrooming," longer life.
3. Character and size plainly stamped on hand for quick, easy identification.
4. "Master Marker" trademark for guaranteed replacement.
5. Rounded shank edges for comfortable use.
6. Extra metal in fillet for increased stamp durability, lower replacement cost.
7. Bevels scientifically angled for clearer stamping, longer life. Outer bevel extends beyond inner bevel depth; prevents breakdown of character face.

Use Pannier "Master Marker" Steel Stamps for a long life of clean-cut, legible impressions. Write for complete listing of styles and sizes.

Other PANNIER "MASTER MARKER" Products
- Steel Dies
- Rubber Dies
- Rubber Stamps
- Stencils & Supplies
- Embossing Equipment
- Branding Equipment
- Marking Inks
- Metal Tags & Badges
- Production Marking Machines

OFFICES
Pittsburgh Chicago
Los Angeles Youngstown
Philadelphia Indianapolis

THE PANNIER CORPORATION
101 Pannier Bldg.
Pittsburgh 17, Pa.

EXPORT DEPT., BESSEMER BLDG., PITTSBURGH 6, PA.

If you write maker identify as IEN-5516

REGULATES PRESSURE AUTOMATICALLY

For steam, air, gas, water or oil

No. 952

This all-metal Sylphon Regulator is used for reducing from high to low pressure . . . or to insure a constant delivery pressure when supply fluctuates. Equipped with direct-acting type valve (closes with rising pressure). Rugged, dependable, long-lasting. Write for Catalog JN-100.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representative, Darling Brothers, Montreal

If you write maker identify as IEN-5517

Assemble and Inspect under Magnification

in one operation

This starter switch for a refrigerator motor presents a tough assembly and inspection problem. The springs must be accurately bent and adjusted by hand—tolerances are close. With the Kodak Contour Projector, the whole operation—bending and checking—may be done at the same time and under high magnification.

Since the Kodak Contour Projector has provisions for surface illumination from the same lens that picks up the image, every detail of the switch is shown on the screen. A 45° mirror permits the part to be mounted flat for easy accessibility. Both to adjust the part and check tolerances, the operator simply compares the magnified image with a chart-gage laid on the bright screen.

For rapid, routine inspection and adjustment work, the economical, stripped-down Kodak Contour Projector, Model 3, will meet your requirements. For toolroom measurement, the versatile Model 2A is what you need. In your area there is an experienced field engineer who will be glad to discuss your own particular problems. You can get in touch with him by writing Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

If you want to check precision spur and helical gears in action, write for information about Kodak Conju-Gage Instrumentation.

Kodak

If you write maker identify as IEN-5519

MORE PRODUCTION PER MAN HOUR! with APPLETON Retract-o-Reel

Spring Operated Balancing Reel for Portable Tools

● The Appleton Retract-o-Reel speeds production by easing the job of power tool operation. Weight of the tool is entirely supported by the Retract-o-Reel. When not in use, tool is held up out of the way.

Spring tension of the Retract-o-Reel may be adjusted to counterbalance any power tool up to ten pounds in weight. It's a production aid that pays for itself in saved man hours and longer tool life. Put the Retract-o-Reel to work for you soon.

Sold Through Electrical Wholesalers and Mill Supply Companies

APPLETON ELECTRIC COMPANY
1716 Wellington Ave., Chicago 13, Ill.
Field Engineers in All Principal Markets

APPLETON
CONDUIT FITTINGS · LIGHTING EQUIPMENT · OUTLET AND SWITCH BOXES
EXPLOSION-PROOF FITTINGS · RESILITES

If you write maker identify as IEN-5520

Light Where Light is Needed MOST

FOSTORIA LOCALITES
Help Your Workers See Better

Lights the Vital Seeing Zone

Machine Tools, Inspection and Assembly Benches

MODEL 3470-P-172
Overall length 48½". Three instantly adjustable joints. Circular base for machine or wood screw mounting

$7.16 EACH
in pkg. of 6
Single Units $8.95 ea.

● Rugged Construction withstands vibration and rough handling
● Instantly Adjustable with flexible ball and socket joints
● Baked Enamel Finish—Exterior, Smooth Gray—Reflector Interior, high temperature White
● Reflector accommodates 100 watt or any A-19 or A-21 medium screw base lamp
● Wired Complete with switch socket and 8 ft. oil-resistant cord and moulded plug

Write for Complete Catalog of Localite models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO
Localites are available through electrical wholesalers everywhere.

LOCALITE fostoria for Light ON the Job

If you write maker identify as IEN-5521

STANDARDIZE WITH OHIO

Illustration above shows how an Ohio Gear Special Speed Reducer acts as the "Old Man" in operating Chick Master's huge 18,000 egg incubator unit. This reducer turns the steps just as the Man would, in switching the chicks. Powered also are four units of a large Hatchery, producing 512,000 chicks every 21 days. Each unit is operated by an Ohio Gear Special Speed Reducer.

● Chick Master Incubator Co., one of the world's foremost manufacturers of commercial incubators is putting a lot of faith in Ohio Gear's product and engineering ability which in turn insures their incubators continuous performance from coast to coast — a grand tribute to a speed reducer. .

Perhaps your product could use Ohio Gear's experience in gears and reducers whether stock or special. It's good insurance. Call your nearest distributor or write direct.

ESTABLISHED 1919
THE OHIO GEAR COMPANY
2348 EAST 170TH STREET · · CLEVELAND 10, OHIO

OHIO GEARS

NEW LITERATURE—Continued

STORING . . Steel lockers in a range of designs; illustrated models, sizes, suggestions on planning a locker installation, specifications. Catalog L-100, 20 pages. Penn Metal Corp. of Pa., 48-52 Oregon Ave., Philadelphia 48, Pa. **IEN-0550**

STRAIGHTENING . . "Supermatic" machines to straighten and cut off wire from 1/16 to 1 in. at speeds to 200 fpm.; illustrated description, condensed data. Folder 52-A, 4 pages. Medart Co., 3533-37 DeKalb St., St. Louis 18, Mo. **IEN-0551**

TAPES . . Application picture book for pressure-sensitive tapes shows 8 basic uses, specific industry applications, special tape examples. Booklet, "Tape Graphic," 32 pages. Industrial Tape Corp., Highway 1, New Brunswick, N. J. **IEN-0552**

TAPES . . "Scotch" pressure-sensitive tapes: examples of 14 colors, selector chart against 8 tape types, list of uses for each type. "Color Chart," 4 pages. Minnesota Mining & Mfg. Co., 902 Fauquier St., St. Paul 6, Minn. **IEN-0553**

TESTING . . Electronic instruments including vacuum-tube voltmeter, Q-meter, decade inductors; condensed data. Folder, "Laboratory Test Equipment," 12 pages. Freed Transformer Co., 1720-34 Weirfield St., Brooklyn 27, N. Y. **IEN-0554**

TESTING . . Small portable gage to measure thickness of dry films and coatings on ferrous surfaces: instructions, ranges, uses. "Elcometer," 4 pages. Henry A. Gardner Laboratory Inc., 4725 Elm St., Bethesda 14, Md. **IEN-0555**

TESTING . . Photoelectric light-comparator instrument for colorimetric work; component details, notes on use. "Colorede," 4 pages. Instrument Development Labs. Inc., 161-65 Highland Ave., Needham Heights 94, Mass. **IEN-0556**

TESTING . . Model-105 amplifier to assist in making electrical measurements at power frequencies; schematic circuit diagram, uses. "Meter Matcher," 4 pages. Keithley Instruments, 3886-70 Carnegie Ave., Cleveland 15, Ohio **IEN-0557**

THREADING . . Tapping head to use in a drill press; captioned sectional views, models and tap capacities, accessories and adapters. Bulletin 101, 6 pages. Procunier Safety Chuck Co., 16-20 S. Clinton St., Chicago 6, Ill. **IEN-0558**

TIRES . . Solid and cushion tires for industrial trucks, listed by truck make and model; standard sizes, specials, suggestions on tire care. "Industrial Tires," 28 pages. Monarch Rubber Co., 25 Lincoln Park, Hartville, Ohio **IEN-0559**

TRACTORS . . Attachments for Caterpillar tractors; data on winches, cranes, excavators, also logging and construction specials, uses. Bulletin 1191, 6 pages. Hyster Co., 2616 N. E. Clackamas St., Portland 8, Ore. **IEN-0560**

TRACTORS . . "Industrial Wheeler" gasoline tractor for drawbar or loader work; two-page cut-away view, engine details, uses. Bulletin 1030, 12 pages. Minneapolis-Moline Power Implement Co., Box 1050-A, Minneapolis 1, Minn. **IEN-0561**

TRANSFORMERS . . Description on underload tap-change equipment for unit substations, regulators, transformers to 7,500 kva. Catalog 5112, letterhead request, 16 pages. Pennsylvania Transformer Co., Box 330-A, Canonsburg, Pa. **IEN-0562**

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

If you write maker identify as IEN-5522

TRABON LUBRICATING EQUIPMENT
Delivers a Measured Amount of Lubricant
• To Any Bearing . . .
• In Any Location . . .
• Under Any Condition

In the plant of Cans, Inc., Chicago, a Trabon system services 221 points of lubrication on this machine, which produces 310 cans per minute!

Since 1930 Trabon has been engineering, manufacturing, and installing centralized lubricating systems . . . for plain bearings, roller bearings, and ball bearings . . .

Since 1922 Trabon has been helping industry solve its lubricating and bearing problems.

Call Trabon in regard to your lubrication requirements.

Trabon
OIL AND GREASE SYSTEMS

TRABON ENGINEERING CORP.
1814 East 40th Street
Cleveland 3, Ohio

If you write maker identify as IEN-5523

C-D-F MAKES IT . . .

The Spool that keeps its HEAD!

A radio coil manufacturer wanted small spools, less costly than those machined down from round stock, much stronger than molded bobbins. C-D-F supplied this:

A rolled Dilecto tube is grooved on one end . . . stepped down in the middle . . . then notch cut on the other end for a flush fit. C-D-F uses a special adhesive to bind the three parts (the body and two Dilecto spool heads) together. The assembly is sufficiently strong to withstand the outward pressure of the wire. The spool never loses it's head! Because Dilecto is resistant to high heat, excessive humidity, many corrosive and chemical actions, it can be used for many coil and electronic applications.

Engineers . . . if you need fabricated parts, special laminated and molded plastics, Micaband and Teflon tapes and sheets . . . C-D-F can help you. Write today for Dilecto catalog, name of your C-D-F sales engineer.

Continental-Diamond Fibre Company
NEWARK 21, DELAWARE

If you write maker identify as IEN-5524

Waste Hours...or Work Hours in Your Plant?

Why Overwork Three Men This Way . . .
Old-fashioned hand-handling means wasted man-power, slowed down production and shipping bottlenecks.

When One Man Does It Easier This Way
Press-button magic moves tons and tons with finger tip control. Saves hours and dollars in handling costs every working day!

SPEED PRODUCTION...SHIP MORE GOODS FASTER

Year after year, more and more companies have come to learn that Automatic "101" TRANSPORTERS cut their materials handling costs as much as 50% or more, while adding valuable man-power in man-hours saved.

"101" TRANSPORTERS are sturdy, too. To prove how ruggedly these electric trucks stand up—to our knowledge every TRANSPORTER manufactured is still in service . . . and tens of thousands have been built. That's why there are *more* Automatic TRANSPORTERS in use today than any other operator-led electric truck.

PUT YOUR FINGER ON Materials Handling Costs In Your Own Plant!

Let us send you—free and without obligation—the new "*Materials Handling Analysis Guide*" that helps you check materials handling problems in your own plant . . . and reveals how you can improve material handling efficiency and save money in *your* business.

"101" Transporter
A PRODUCT OF AUTOMATIC

Automatic ® 109 W. 87th Street,
Dept. E-2, Chicago 20, Illinois

If you write maker identify as IEN-5525

Clebar
the stop watch of split second accuracy

Decimal Timer for Time Study, minute divided into hundredths, side slide starts and stops hands, fly-back from crown, 7 jewels, non-magnetic, 30 minute register. SNAP-BACK ACTION.

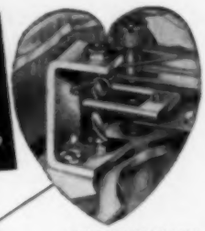
There is a Clebar stop watch for every precision timing purpose. Write for new FREE catalog which illustrates more than a score of models.

CLEBAR WATCH AGENCY
521 FIFTH AVENUE, NEW YORK 17

If you write maker identify as IEN-5526

Only DWYER MAGNEHELIC GAGE has the ultra-sensitive "MAGNETIC LINK"

Not subject to surge or vibration damage



EXCEPTIONALLY VALUABLE FOR MEASURING

- Filter Resistance
- Air Velocity
- Furnace Drafts
- Static Pressures
- Gas Pressures
- Checking — Flow meters, control equipment, automatic valves, gas-air ratio controls, etc.

The exclusive "Magnetic Link" is a Dwyer Development offering extreme sensitivity, low cost and a ruggedness that makes the Magnehelic Gage ideal for portable, as well as stationary, use. Long Life and trouble-free operation is assured. Ranges from 0-1" of water to 0-2 psi.

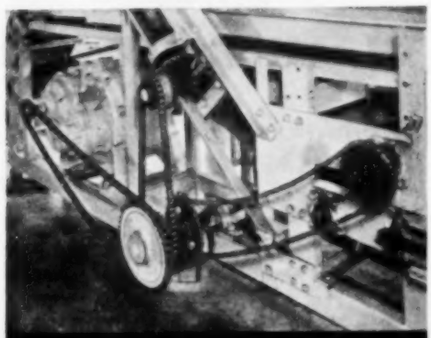
Request Bulletin No. 250

F. W. Dwyer Mfg. Co.

307 SOUTH WESTERN AVENUE • CHICAGO 12, ILLINOIS

If you write maker identify as IEN-5527

FOR SHOP DRIVES of Every Kind!



DIAMOND ROLLER CHAINS and SPROCKETS

Rugged, versatile, uniform highest quality Diamond Roller Chains and Stock Sprockets meet most every shop drive problem. Their high (98-99%) efficiency and exceptional long life provide great operating economy. Installation is quick and easy regardless of shaft center distances and speed ratios. Operation is smooth, quiet, easy on bearings.

Diamond Roller Chains and Stock Sprockets are available in a wide range of types and sizes to fill practically every drive requirement. Write for Catalog 709.

DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue
Indianapolis 7, Indiana

Office and Distributors in All Principal Cities

Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

If you write maker identify as IEN-5529

GRINDING . . Contour machine for jet engine blades, vanes, nozzles

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.

For jet engine production

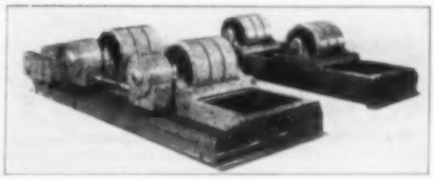
Rise-and-fall action is imparted to the work spindle in step with in-and-out swinging motion to determine the contour that will be ground by this new machine. It finishes the external airfoil surfaces of jet engine blades, buckets, vanes, nozzles. The work is held on an arbor between right-hand and left-hand shape-producing units that operate together to impart the figure "8" motion.

The shaping motion presents the surface to be ground at the horizontal center line of a wide wheel which produces the airfoil surface in one plunge action. The design permits grinding to a varying shape from one end of the work piece to the other. The removable work arbor is supported by ball-nose centers which are held in the spindles of the shape-producing units in removable arrangement. The arbor is designed for the specific conditions of given work so it will be supported at the required angle.

If you write maker identify as IEN-5530

HANDLING . . Power rotated rolls for cylindrical work to 14 ft. diameter

Source: REED ENGINEERING CO.
1005-15 W. Fairview Ave., Carthage, Mo.



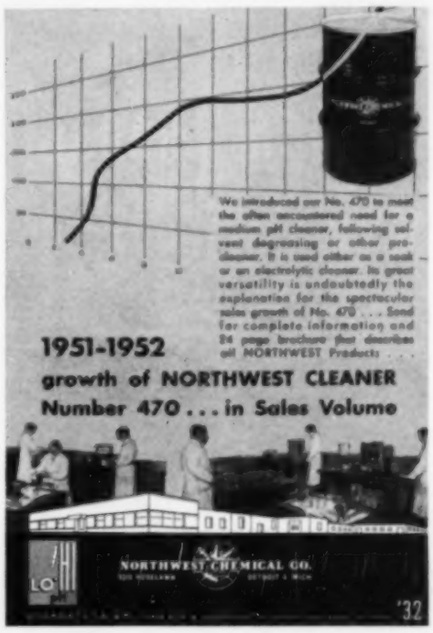
Big work rides smoothly

Model M-1500 is a new assembly of power-driven rubber-tired rolls and one or more idler sets on which to mount cylindrical work such as large tanks that require rotation or positioning to weld, fabricate, machine, inspect. Diameter capacity is to 14 ft. for work load to 75 ton with one power unit and two idler units. This compares with a smaller Model 120, previously described IEN-8518-48, in which diameter was to 12 feet.

Drive is by a 5-hp. motor with reversing magnetic starter and relays. The motor connects through a variable-speed transmission and geared reducer for a range between 5 and 40 inches per minute. The wheels measure 22 in. in diameter by 21 in. in face width. Assemblies of both power and idler units are on structural steel bases with provision to adjust center distances in measured steps.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5531



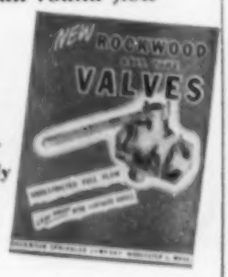
If you write maker identify as IEN-5532

Leakproof, full round flow

BALL VALVE

resists wear longer opens, closes quickly with quarter turn

GET THIS FREE BOOKLET FOR FACTS!

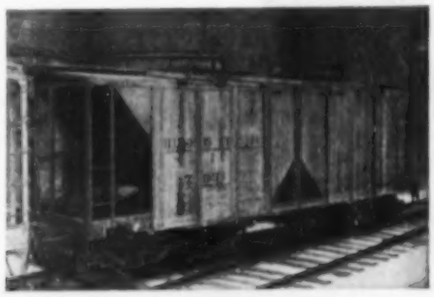


Ideal for handling water, air, carbon dioxide, nitrogen and other gases, paraffin and asphalt base petroleums, alcohol, paper fluids and many other types of liquids and gases.

Full, round, pipe-sized open area of Rockwood ball valves prevents shape of stream from altering . . . allows piping to handle fluids with minimum friction loss. Each valve constructed with chrome-plated, floating bronze ball that is extremely resistant to scratching, pitting, abrasion. Valve does not depend on mechanical parts to maintain proper alignment of ball and seat. Opens and closes with a quarter turn. Approved by Underwriters' Laboratories, Inc. For complete details, write us direct. Distributors in all principal cities.

ROCKWOOD BALL VALVES
ROCKWOOD SPRINKLER COMPANY
40 HARLOW STREET, WORCESTER 5, MASS.

If you write maker identify as IEN-5533



NO STOPS FOR PAINTING IN SIX YEARS!

Six years under attack from rain, heat, cold, sunlight, corrosive fumes, vibration, and pounding with sledge hammers to loosen the load . . . and this car's coating is still on the job!

It's a coating based on VINYLITE Brand Resins—and a good example of the protection such coatings will give *your* plant, equipment and products! Properly formulated and applied, coating systems based on VINYLITE Resins resist oil, grease, chemicals, brine, alkalies and most strong acids. They're easily applied to metal, concrete, or masonry by dip, brush, or spray. They're non-flammable, quick-drying, odorless, tasteless and non-toxic...protect containers from their contents and contents from containers. They have a wide range of colors—glossy, flat, or semi-luster—that are unchanged by repeated scrubbing and washing.

Wherever corrosion and wear are a problem—on tanks, pipelines, machinery, containers, rigging—use coatings based on VINYLITE Brand Resins. They have the unique properties that make VINYLITE Resins and Plastics so useful for scores of products in defense and basic industry. Tell us about your coating problems. Write Dept. MZ-3.

Data on "Carclad" Three-Coat System courtesy Sherwin Williams Company
101 Prospect Ave., N. W., Cleveland 1, Ohio.

Vinylite BRAND RESINS

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

If you write mater identify as IEN - 5535

COSMOLINE COATED GUN COMPLETELY DEGREASED

IN LESS THAN 4 MINUTES

Four 20mm. guns heavily coated with Cosmoline are raised from the degreaser in a clean, dry condition, ready for subsequent operations.

WITH A PHILLIPS Electric VAPOR DEGREASER

HERE was a really tough metal cleaning problem. Cline Electric Manufacturing Company, Chicago, had to remove Cosmoline from 20mm. guns before modification operations on the guns. Cline purchased a Phillips electric batch-type degreaser to handle the job. As a result sixteen guns are being degreased per hour at a savings of 85% on cleaning costs per gun.

Here is another instance of how Phillips degreasers cut costs through faster, more thorough, more economical metal cleaning. For the answer to your degreasing problems, check with Phillips.

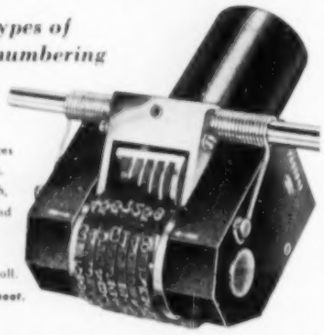
SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

If you write mater identify as IEN - 5536

FORCE automatic indenting head

For all types of metal numbering



Its clean-cut engraving produces sharp impressions. Combines strength, precision. 6, 7 and 8 wheel models. Consecutive and repeat action on all. Send for Data Sheet.

THREE QUARTERS OF A CENTURY'S SERVICE

WM. A. FORCE
A COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 2, N. Y.

If you write mater identify as IEN - 5537

NEW THREAD COMPOUND
Licks Stud Freezing Even at 1800°F.!

SAFE for all high temperature applications!
SAFE for Stainless and Alloy Steels, too, will not pit or corrode!
IDEAL as a cutting compound to prevent galling of Stainless Steel!

FREE TEST SAMPLE! Send for YOURS TODAY

Make a convincing test of Fel-Pro C-5 "Hi-Temp" Thread Compound at our expense. Then you can be sure that C-5 will do everything we say it will do. See how it cuts heater dismantling time—how it cuts costly stud breakage and eliminates pitting. Then you will standardize on C-5 just as have some of the nation's largest refineries, utilities and process industries. Write for FREE Sample and data sheet TODAY!

FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

FELT PRODUCTS MFG. CO.
1528 CARROLL AVE. • CHICAGO 7, ILLINOIS

NEW LITERATURE—Concluded

TRANSFORMERS . . Constant-voltage, 15 to 10,000 volt-amperes; operation data, models and specifications, application suggestions. Bulletin CV-142-P-52, 24 pages. Sola Electric Co., 4631-35 W. 16th St., Chicago 50, Ill. **IEN-0563**

TRUCKS . . Gasoline-power platform truck and tractor, 2,000-lb. capacity, for plant utility use; standard specifications, modifications, specials. Bulletin ST-3, 4 pages. Kalamazoo Mfg. Co., 1825-29 Reed St., Kalamazoo, Mich. **IEN-0564**

TRUCKS . . Hand-operated 1,000-lb. hydraulic unit, lowered height 6 in., elevated height to 108 in.; notes on use in lift and tier service, construction. Bulletin 242, 2 pages. Raymond Corp., 3590 Madison St., Greene, N. Y. **IEN-0565**

TURBINES . . For mechanical drive, ¼ to 120 hp., using steam, gas, air; construction, ratings, uses. Six data bulletins. No. 4110-A to 4110-F, 34 pages total. Pyle-National Co., 1348 N. Kostner Ave., Chicago 51, Ill. **IEN-0566**

VALVES . . "Maxitrol" pressure-regulating valves for gas-burning equipment, capacities, performance curves, maintenance instructions. Catalog 52, 16 pages. Detroit Regulator Co., 1740-44 Rivard St., Detroit 7, Mich. **IEN-0567**

VALVES . . "Cushioned" type in float, check, reducing, relief, non-return and solenoid designs; condensed specifications. Bulletin G-3, 8 pages. Golden Anderson Valve Specialty Co., 2079 Keenan Bldg., Pittsburgh 22, Pa. **IEN-0568**

VALVES . . Solenoid-actuated pilot operating valves for air, vacuum, oil and water; sectional drawings, pressure and electrical ratings, dimensions. Technical Bulletin P, 8 pages. Valvair Corp., 949 Beardsley, Akron 11, Ohio **IEN-0569**

VENTILATING . . Flexible air duct for aircraft use, made of fiberglas with helical-spring reinforcement; properties, specifications, splicing. "Flexflyte," 4 pages. Flexible Tubing Corp., 254-58 Main St., Guilford, Conn. **IEN-0570**

VIBRATING . . Electric vibratory packers for packaging, processing, settling, also jolters for light fluffy materials; catalog data. "Vibratory Packers," 4 pages. Syntron Co., 410 Lexington Ave., Homer City, Pa. **IEN-0571**

WASHROOMS . . Color pictures of washrooms using company's tile for walls, base, floor; color combinations, planning ideas. Booklet 300, letterhead request, 20 pages. American-Olean Tile Co., 915-19 Kenilworth, Lansdale, Pa. **IEN-0572**

WATER TREATING . . Hot-process softeners; sectional views and flow diagrams on available models, standard and special applications. Bulletin 2341, 32 pages. Permutit Co., 330 W. 42nd St., Room 700, New York 18, N. Y. **IEN-0573**

WATER TREATING . . "Hydrion" ion-exchange unit to produce battery-refill water from tap water; specifications, list prices. Pocket folder Series B-52, 8 pages. A. E. Tomkin & Co., 1826-30 Columbia Road, Washington 9, D. C. **IEN-0574**

WELDING . . "Tool-Arc" tool-steel electrodes for use on tools and dies; types, properties, recommended procedures and subsequent heat treatment. Bulletin AR-52-1, 8 pages. Alloy Rods Co., 6505 W. Market St., York, Pa. **IEN-0575**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write mater identify as IEN - 5538

wheelco instrumentality

42 PAGES— THERMOCOUPLE FACTS & CHARTS

wheelco data book and catalog

For Improved Instrumentation—Wheelco Bulletin TC-9. It contains complete information on thermocouples, radiation detectors, resistance bulbs and other control accessories—wire sizes, resistance and temperature-millivolt curves. Know when and how particular sensing units and control accessories should be used.

WRITE FOR BULLETIN TC-9—TODAY.
Wheelco Instruments Company,
85 W. Harrison Street, Chicago 7, Illinois.

wheelco electronic controls

If you write mater identify as IEN - 5539

BENDIX FRIEZ

Bendix-Friez THERMISTORS
NEGATIVE TEMPERATURE CO-EFFICIENT CERAMIC RESISTORS

• These temperature responsive resistors are useful as temperature measuring elements and as liquid level sensors; they are especially well suited to compensation where the circuit constants must be maintained irrespective of temperature changes. Since they are a fired ceramic, they are stable under practically all conditions and respond only to temperature changes.

Typical application in capsule form for temperature sensing of hydraulic oil.

Many other values can be obtained from standard diameter material. Because the thermistors are made in our own plant, under extremely careful control, special compositions, shapes, and resistance values, hermetically sealed or otherwise protected, can be made in any quantities to suit your individual requirements.

We invite your Inquiries Write Dept. H

BENDIX-FRIEZ STANDARD ROD TYPES

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x ¾	45 ohms	88 ohms	193 ohms
.040 x 1.5	14,000 ohms	29,946 ohms	74,676 ohms
.018 x 1.5	40,000 ohms	94,040 ohms	262,400 ohms

FRIEZ INSTRUMENT DIVISION of Bendix
1824 Taylor Avenue • Baltimore 4, Maryland
Export Sales: Bendix International Division, 72 Fifth Ave., N.Y. 11, N.Y.

If you write mater identify as IEN - 5540

For fast, accurate drilling at new low levels of investment and production costs

NEW WALKER-TURNER 15" Production DRILL PRESSES

Check these features: 1 One spot lubrication. 2 Ball Bearings give independent pulley mounting. Relieves spindle from all belt tension strain. 3 4-step pulley. 4 0" to ½" Jacobs Chuck on #33 taper. 5 Spindle mounted on 2 Ball Bearings. 6 One piece head casting. 7 Six spline spindle.

GENERAL SPECIFICATIONS

SPINDLE TRAVEL: 4½" or 6". FOUR SPEEDS: 600, 1250, 2440 and 5000 R.P.M. with 1740 R.P.M. motor. CAPACITY: Bench Models — 12" chuck to table, 17½" chuck to base. Floor Models — 39½" chuck to table, 46" chuck to base. All models 7½" center of chuck to column. CHUCK: #6A Jacobs key type capacity 0 to ½". TABLE: 10" x 12¼" machined working area. BASE: 10" x 9" machined working area on Bench Models. 11" x 9" on Floor Models. SPINDLE: Six spline full floating type, ⅝" diameter, male #33 Jacobs taper for No. 6A Jacobs Chuck, or #1 Morse taper socket (optional). PULLEY: Straddle mounted on two ball bearings for extra rigidity. New upper mounting permits quick belt changing. COLUMN: Ground seamless steel tubing, 2¾" in diameter.

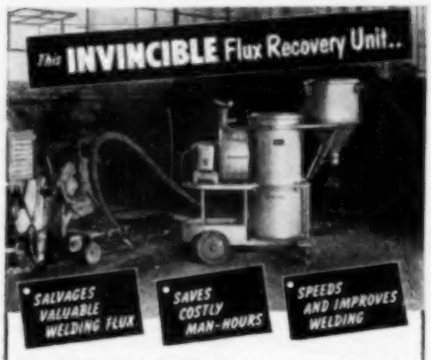
72 different models. Drill heads adaptable to hundreds of diversified uses.

SOLD ONLY THROUGH AUTHORIZED DISTRIBUTORS

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES • RADIAL DRILLS • TILTING ARBOR SAWS
BELT and DISC SURFACERS • METAL-CUTTING BAND SAWS
SPINDLE SHAPERS • JOINTERS

If you write maker identify as IEN - 5542



On submerged arc welding jobs, Invincibles recover all loose flux from the work, remove slag or fused particles, and return the unfused flux to the hopper of the welder. Invincibles do the job *automatically*—fast, more rapidly and efficiently than manual methods. Also by removing all fine dust (flux flour), Invincibles reduce welding rejects and speed production.

Write for FREE folder on Welding Flux Recovery Systems

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 5543

MAKE THIS FREE TEST
and discover for yourself there's no better direct positive print paper

NOW you can have longer-lasting direct prints that fairly sparkle with contrast

You get blacker-than-ever lines on whiter-than-ever backgrounds with DIRECTO, the new, improved Dietzgen semi-dry process that gives you ready-to-use direct positive prints in seconds. DIRECTO prints fight wear and tear, and even when oil-soaked, grime-smeared, sweat-stained they retain amazing legibility.

You are assured of uniformity because DIRECTO developing solution is chemically stable, always brings out strong black images, whether mixed fresh or old. And there's no washing, no lengthy drying, no negative needed. DIRECTO prints are made direct from your translucent original.

Compare this remarkable material with any other you have ever used. DIRECTO is available now with blue, pink, yellow and green backgrounds, as well as white, for convenient color coding. Send for samples.

EUGENE DIETZGEN CO. • Chicago • New York • San Francisco
New Orleans • Los Angeles • Pittsburgh • Washington
Philadelphia • Milwaukee • *Dealers in All Principal Cities*

DIETZGEN
EVERYTHING FOR DRAFTING SURVEYING & POINTMAKING

Free Samples!

If you write maker identify as IEN - 5545

TRUCK . . Power lift fork design based on standard tractor in reverse

Source: TRACTO-LIFT CO.
2009-13 Baltimore Ave., Division 1, Kansas City 8, Mo.

Engine and counterweighted

Outdoor handling and storing of materials are the intended applications for this new tractor-based power-lift fork truck. A standard tractor is reversed to bring the rear wheels into front load-carrying position on the two sides of a structural hydraulically-operated fork lift mechanism. The machine will travel over soft and uneven ground to carry its rated load without difficulty. Under-clearance is minimum at 8 in. on the smallest of the four sizes which rate at 1½ to 3 ton in load-carrying capacity. Fork length ranges from 30 to 60 inches. Lift height of the new truck is to 12½ feet.

If you write maker identify as IEN - 5546

VENTILATING . . Circulating fans, 24 and 30 in., floor, ceiling, table

Source: BALDOR ELECTRIC CO.
4353-65 Duncan Ave., St. Louis 10, Mo.

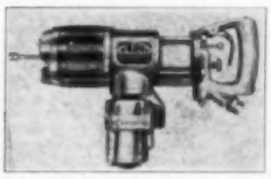
Prices range
$72 to $125

The company announces two new air-circulating fans, each operating at 800 and 1,100 rpm., with ball-bearing, factory-lubricated, permanently-sealed motors. Floor, ceiling and table-mounting supports are available. The smaller unit rates 3,900 and 5,100 cfm. The larger one rates 4,600 and 6,500 cfm. A characteristic is quiet operation.

If you write maker identify as IEN - 5547

COUNTERSINKING . . Pneumatic tool finishes a ⅜ in. hole in 9 seconds

Source: CLECO DIVISION
5129 Clinton Drive, Houston 20, Texas



Correct depth each time

The operator of this new portable pneumatic tool selects and places a center mandrel and the cutter he desires to use to countersink a run of holes. Then he enters the mandrel in the first hole, expands it to grip the tool in place and advances the cutter. A micrometer-controlled depth stop limits the cut. Oil is supplied for the rotating parts by a built-in lubricator. The tool is available for use on any machinable metal and for specified hole sizes. The company will advise on use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5548

MEASURE LIQUIDS ACCURATELY TO PREVENT WASTE AND LOSS with the WIDE RANGE of

NIAGARA METERS

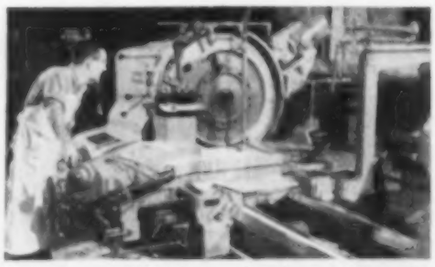
Niagara-metering assures accurate measurement of almost any volume or type of liquid. Waste and losses are cut down. liquid-quantity formulae may be followed more precisely. Liquids keep moving smoothly and continuously in the meter for time-saving efficiency. Measure with Niagara Meters!

Send coupon for complete details today.

Please send me full information on use of Niagara Liquid Meters for:
Liquid .....
Temp. ..... °F. Pressure ..... p.s.i.
Flow rate ..... g.p.m.
Maximum Batch ..... gals.
Company .....
By .....
Address .....

BUFFALO METER CO.
2929 MAIN STREET BUFFALO, N. Y.

If you write maker identify as IEN - 5549



Maintain good lighting and reduce spoilage by holding proper voltage with G-E Inductrols

(dry-type induction voltage regulators)

Your plant lighting operates best at rated voltage. If, for example, voltage on incandescent lamps drops 10% below normal, lamp brilliance decreases 30%—and workmanship suffers. If voltage rises 10% above normal, lamp life decreases 70% and replacement costs go up. And where fluorescent and mercury vapor lamps are used, similar adverse effects occur.

That's why it pays to install G-E Inductrols. These new dry-type voltage regulators automatically maintain correct voltage for your plant lighting and other electric equipment, thus assuring peak operating efficiency.

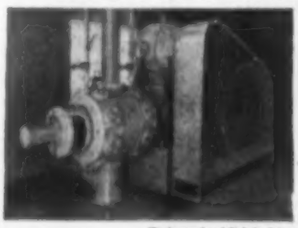
For more information on Inductrols, contact your local G-E sales representative or authorized agent. Write for bulletins GEC-712, GEC-795, and GER-341, *General Electric Company, Schenectady 5, New York.* 420-92

G-E Inductrols are ideal for light-dimming applications.

GENERAL ELECTRIC

If you write maker identify as IEN - 5550

AIR FREE FROM OIL



With overhead V-belt drive

Since no oil, grease or other cylinder lubricant is required in CP OIL-LESS CYLINDER COMPRESSORS, they are ideal where it is essential that compressed air be absolutely free from oil to avoid injury to products. Available in a wide range of sizes and ratings; in single and two-stage types; arranged for belt, motor or steam drive. Write for Bulletin 728-8.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 48th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 5551

TAILORED TO YOUR JOB

ALLIS-CHALMERS Pedestal-Mounted PUMPS

For Low Cost Per Gallon Pumped

HERE'S HOW it's engineered for your job! You start with the standard pedestal-mounted pump with its rigid cast iron pedestal; two heavy duty oil lubricated bearings; and big oil reservoir. Then, working with A-C engineers, the optional constructions are selected.

Shaft, sleeve, impeller, and wearing rings are all available in many types of material. In addition, six alternate sealing arrangements, including a water-cooled stuffing box, are available. Result: Low cost per gallon pumped!

Capacities to 1200 gpm; heads to 250 feet, temperatures to 500 degrees F. Call your nearby A-C district office or write Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS A-C A-3617

If you write maker identify as IEN-5552

CAL-WIC WIRE CLOTH

In all Meshes, Weaves and Weights

Filtering, screening or grading—whatever your special job demands may be—Cal-Wic Wire Cloth is available in the right mesh, weave or weight to meet your requirements. Resistance to corrosion, abrasion and temperature extremes assured through the use of appropriate metals and alloys.

The long-wearing qualities of Cal-Wic Wire Cloth take on added importance during times like the present.

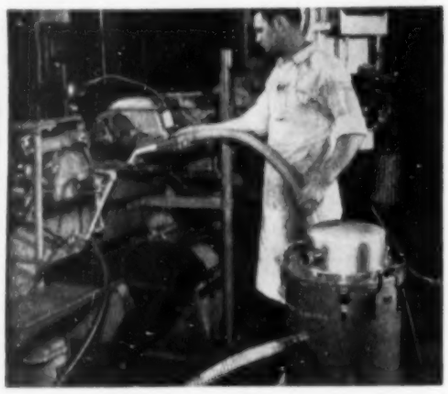
For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado.
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, Calif.

CAL-WIC
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN-5553

Economize on cleaning costs NOW



One worker with *one* G. E. heavy duty cleaner can clean *any* surface . . . pick up small scrap for salvage . . . clean high-up, out-of-reach areas quickly and safely. By using a simple attachment, he can clean *wet* surfaces . . . pick up mop water, toilet overflow, drinking fountain leakage, etc.

G. E. industrial cleaners were designed after thorough survey of industrial cleaning needs. That's why G. E. cleaners have so many time and money saving features.

For instance—nozzles are extra wide (12" and 18") to cover big areas quickly. Motors have extra power to pick up industrial scraps or fine dust with equal ease. Each unit converts quickly to powerful blower for collecting coarse litter into convenient piles for easier disposal. These and other features of G. E. cleaners help you get to the root of high cleaning costs—make each of your maintenance workers more productive. **Mail coupon for details.**

Industrial Cleaners

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, Dept. 22-5552
1285 Boston Ave., Bridgeport 2, Conn.
Without obligation, please send complete details on heavy-duty cleaning equipment.

NAME _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN-5555

BALANCING . . Milling machine, weight controlled for connecting rods

Source: MOTCH & MERRYWEATHER MACHINERY CO.
715 Penton Bldg., Cleveland 13, Ohio

Work is held motionless while being machined

Model WSMS is new assembly of the company's two-station duplex milling machine and a Toledo weighing scale to check automotive connecting rods and mill the faces at the ends so they will be brought into correct weight balance. The assembly represents further development of the Model FWS-10, previously described 1EN-6613-51. It differs primarily in the design of the milling machine.

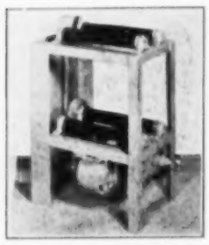
Opposed heads carrying the cutters in the machine are mounted on slides with a centrally-located rotating index table that moves through 180 deg. to present first one work-holding fixture and then the other. The table locks rigidly so the work is held stationary while the heads advance, feed and retract. As soon as they clear the work the table rotates through its 180-deg. arc to present the finished work for unloading and to open the fixture to receive a new piece while work proceeds on the one now in machining position. Production rate is increased from 240 to 320 pieces per hour.

The operator positions a connecting rod on the scale, as in the original design, so its amount and location of overweight acts through the scale to position stops in the milling machine. These stops govern the machining operation as soon as the operator has removed the connecting rod from the scale, placed it in the fixture and pressed the cycle-start button. The actions of weighing, loading and unloading at one fixture do not interfere with procedure of the machining cycle at other fixture and this accounts for increased productivity.

If you write maker identify as IEN-5556

MIXING . . Roll type machine rotates pint to 3-gallon filled jars

Source: UNITED STATES STONEWARE CO.
Box 350-A, Akron 9, Ohio

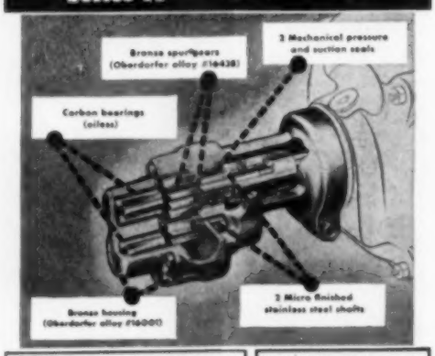


Patented design of the motor-driven rolls in this new Two-Tier Jar Mill matches one roll with a convex outline to its companion unit with a concave outline. The arrangement prevents a jar or materials container from moving toward one end or the other as it is rotated. Drive is by a ¼-hp. motor with ball-bearing support for the rolls on a structural frame measuring about 20 by 12 by 30 inches. Assembly weight is 85 pounds. Constant or variable speed can be specified in the drive to meet requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

If you write maker identify as IEN-5557

INTERNATIONAL BRONZE PUMPS
Series II



DIMENSIONS & PRICES—Pump only

Pump No.	Ht.	Width	Lgth.	Price
1½ CCC	2⅞"	3 11/16"	4⅝"	$20.00
2 CCC	3 11/16"	2⅝"	4⅞"	22.50

Complete units with ½ hp 110 volt AC thermal overload motors (motor standard, but specially machined for pump mounting) . . . prices on request.

CAPACITIES—Gal. per min. 1725 rpm—lbs. sq.in.

Press.	1½ CCC	2 CCC
0 lbs.	2.00 gal.	4.00 gal.
25 lbs.	1.83 gal.	3.67 gal.
50 lbs.	1.67 gal.	3.17 gal.
75 lbs.	1.58 gal.	2.83 gal.
100 lbs.	1.50 gal.	—

Oberdorfer Foundries, Inc., Ind. Pump Div.
1125 Thompson Rd. Syracuse, N. Y.

If you write maker identify as IEN-5558

ONLY DIMENSIONAIR Gives You ALL This—

FULL 7½" SCALE OF CALIBRATED ACCURACY — *All of it measures accurately. Not just part of it!*

LONGER APPROACH RANGE to measure earlier BEFORE reaching minimum work size. Total minus range .0015".

GREATER CLEARANCE (.0018" up to .0038") so you can check Undersize, Taper, Out-of-Round and Irregular Shape Holes.

STAY-PUT ZERO — DON'T WORRY ABOUT PRESSURE FLUCTUATIONS.

10 SECOND SET-UP — JUST ONE ADJUSTMENT.

ONE MASTER ONLY — FORGET THE IDEA TWO ARE NEEDED.

INTERCHANGEABLE PLUGS — WITHOUT MAJOR ADJUSTMENT.

MORE SENSITIVE TO SIZE VARIATIONS — fully Jeweled Cushioned Movement.

LONGER PLUG WEAR saves you real money.

Try the Federal Dimensionair yourself — compare it with any other air gage. Write today for complete information and prices. FEDERAL PRODUCTS CORPORATION, 1295 Eddy St., Providence 1, Rhode Island.

FEDERAL
Largest manufacturer of indicating type gages . . . exclusively.

If you write maker identify as IEN-5559

Casey's the nemesis of the twilight league—he's got his old stuff back—throws 'em in like the big leaguer the scouts say he could be. "Give the boss credit," quips Casey. "His tire replacement program did it. These MONARCH MONO-CUSHION TIRES pussyfoot over the floors, soak up jolts and jars instead of me. Now, I arrive at the ball park shake-free and sure. Don't forget the company wins, too,—with a champ 'ball club' plus big league savings on truck and floor maintenance."

The leading manufacturers of industrial vehicles, both hand and powered, use Monarch Tires as original equipment. Replacements are available through the distributors and manufacturers of your vehicles.

CUSHION . . . *all the way through*
TOUGH . . . *all the way through*

THE **MONARCH** RUBBER COMPANY
201 LINCOLN PARK • HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

If you write maker identify as IEN-5561

"M·B" Model U-TR
UTILITY Pneumatic GRINDER
60,000 RPM

A powerful, fast-cutting tool, streamlined in design, easy to handle. Designed for real production work and the toughest jobs. Precision made, excellent balance. Special grease-sealed bearings . . . no lubrication required. Fitted with steel housing, a special safety feature.

Also other Grinders, Speeds 40,000 to 180,000 R.P.M. Such as to operate Tungsten Carbide Burrs, Rotary Files, etc., to full efficiency.

•

Automatic Air Line Filters, Regulators and Lubricators.

Remember, Built-in Quality remains long after First Cost disappears.

Write for Literature

M·B PRODUCTS
46 Victor Ave.
Detroit 3, Michigan

If you write maker identify as IEN-5562

IMMEDIATE SHIPMENT

•

STYLE 500 STACKING BIN

All Prices F.O.B. Factory Phila.

Complete Catalog on Request

Perfect for handling small parts. Open front makes contents easily accessible when boxes are stacked. Rigid handle on back of bin. Will stack with style 600 stacking box of same length and width.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
501-18	10"	16"	6"	18	$1.84	$2.00
502-18	12"	18"	8"	18	$2.51	$2.80

PHONE • WIRE • WRITE
BAldwin 9-1805

•

BAY METAL PRODUCTS
3011 N. 16th St. Philadelphia 32, Pa.

If you write maker identify as IEN-5563

Don't Handcuff That Engine!

STOP Costly Cylinder Wear with the UNIVERSAL TOP OILER

- Reduces Valve and Ring Failures
- Lowers Fuel Octane Requirements
- Reduces Oil and Gas Consumption
- Frees Sticking Valves
- Increases Payload Power

The Universal Top Oiler assures constant, uniform top cylinder lubrication on all types of internal combustion engines by metering vaporized top oil through the intake manifold. When used with an approved upper-cylinder lubricant, it neutralizes corrosive acids, stops carbon and gum formation, prevents dryness in the hottest, busiest part of the engine. Easy to install. List price: $8.95.

Provides maximum benefit when used continuously with Universal Top-Oil. Write for full details.

Gentlemen:
Please send complete information on the UNIVERSAL TOP OILER and the new Universal Top-Oil.

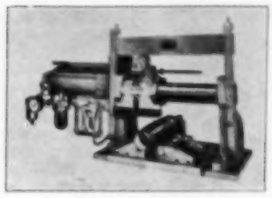
Name _____
Address _____
City _____

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 ALLEGHENY AVENUE • OAKMONT, PA.

If you write maker identify as IEN-5564

MARKING . . Pneumatic machine rolls identification into steel shells

Source: ACROMARK CO.
7 Morrell St., Elizabeth 4, N. J.



Ball bearings support work

Reciprocating head operated by an air cylinder moves from one side to the other of this recently improved marking machine. The head carries one or more lines of type which it impresses into a shell body supported on rollers in the base of the machine.

Designation is No. 9AAS. Operating speed, when marking 75 mm. shells, is to 20 shells per minute. Overall dimensions are 28 by 14 by 20 inches. Feature in the construction is the new overhead horizontal bar that backs up a ball bearing to support pressure as the sliding head moves across the work. The bar is mounted to relieve the load for the full length of the machine stroke.

If you write maker identify as IEN-5565

CLEANING . . Powdered material adds to water for goggles, respirators

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Leaves no soap film

Cleaner-Sanitizer is a new powdered material for addition to warm water to clean personal safety equipment such as goggles, respirators, faceshields, clothing, ear plugs. The powder is packaged in ounce envelopes, 25 to a carton. One envelope is sufficient to make a gallon of cleaning solution. The equipment is washed, rinsed and allowed to air dry. It will come out clean with bacteria count well below minimum public health requirements.

If you write maker identify as IEN-5566

HANDLING . . Rack type pallet for materials transporting and storing

Source: NATIONAL PALLET CO.
1400-A Oliver Bldg., Pittsburgh 22, Pa.

List is $7.50 to $11

Wood base, steel-tube uprights and a wood top make up the assembly of this new rack-type pallet on which materials can be carried from one location to another and then stacked in storage. Four sizes range from 40 by 48 in. to 30 by 60 in. measured over the base. Hardwood is employed in the construction. The assembly can be taken apart to occupy minimum space when the pallet is to be returned to its point of origin or when it is to be stored empty.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 10

If you write maker identify as IEN-5567

See the new Heavy Duty No. 500 Speed Way ½" Speed Drill

- All Ball Bearing.
- Wide-face Helical Gears—precision hobbed from nickel alloy steel.
- Integrally Die Cast Aluminum Body and Frame—all structural and supporting members die-cast—.
- More Powerful Heavy Duty Motor 5½ Amp. input and ⅛ H.P. output.
- No. 34B Jacobs Geared Chuck and finest Electrical Equipment.
- Compact, Powerful, Light—weighs only 10 lbs.

WRITE FOR CATALOG
SPEEDWAY MFG. CO.
1866 So. 52nd Ave., Cicero 50, Illinois

If you write maker identify as IEN-5568

CAN YOU AFFORD NOT TO GIVE YOUR WORKERS PROPER Seating?

A tired worker costs MUCH more than a GOOD CHAIR

Royal's 515 STOOLS WILL HELP KEEP YOUR WORKERS AT PEAK EFFICIENCY...

Resulting in More Work Produced per Man Hour and Lower Actual Costs per Chair.

- STURDY MASONITE INSERT IMBEDDED IN SEAT PAN.
- LEG EXTENSION FOR EASY HEIGHT ADJUSTMENT.
- ADJUSTABLE BACKREST.
- OVEN BAKED GREY ENAMEL FINISH.

60 DAY FREE TRIAL
examine it... test it... use it without obligation

ROYAL METAL MFG. CO.
175 NORTH MICHIGAN AVENUE
CHICAGO 1, ILLINOIS

If you write maker identify as IEN-5569

CORDLEY ELECTRIC WATER COOLERS ...via Graybar

5-year warranty protects against failure of sealed cooling system

It pays to install an adequate number of easily-accessible water coolers throughout your plant. You'll find they save valuable man-hours ordinarily spent in trips to old-fashioned, remotely-located fountains . . . and, they improve worker morale, too.

For the finest in electric water coolers, investigate these Graybar distributed Cordley units. Backed by a 5-year warranty they're sure to give long service life. Should a defect occur within the hermetic factory-sealed refrigerant system, the warranty covers replacement of the entire cooler.

Cordley units are available in models for office and plant use under widely varying conditions. For complete information on the Cordley electric water cooler best suited for your purposes, check with your local Graybar Representative. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, New York 17, N. Y.* 247-125

Call Graybar first for . . . Everything Electrical GraybaR

If you write maker identify as IEN-5570

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE* ROLLS

Minimum Sizes 3" diameter and 3' face length

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

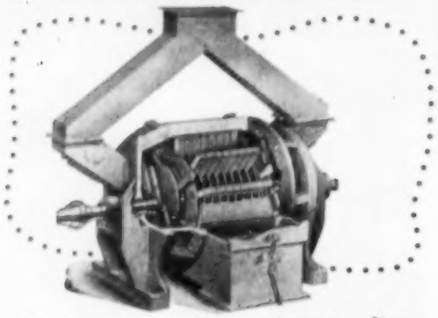
SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
173 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 5571

For fine granulation and uniform quality of product
---PRATER *Triple Reduction* DUAL-SCREEN PULVERIZER



Make sure you have the whole story on the use of Prater Pulverizers and the advantages of Granular Grind in the chemical, food, pharmaceutical, oil bearing seed, distilling, packing, wood, ceramic and feed mill industries. Get new edition of illustrated book. No obligation.

PRATER PULVERIZER COMPANY
1536 So. 55th Court Chicago 50, Ill.

If you write maker identify as IEN - 5572

In baseball, track, swimming and any sports competition, HEALTHY teams are WINNING teams. ONE member with painful, distracting Athlete's foot can impair the efficiency of your entire team.

Here's the Sound Tested Program for ATHLETE'S FOOT Control:

1. ALTA-CO POWDER
for the all-important foot tub in your shower rooms. One pound to a gallon of water kills common Athlete's Foot fungi IN LESS THAN A MINUTE! Non-irritating, harmless to towels. Easily tested for proper strength with Dolge Alta-Co Powder Tester.

2. ALTA-CO FOOT POWDER
for dusting, gives additional protection against re-infection. Soothe while drying between toes. In shoes and socks, this potent but gentle fungicide does its work where Athlete's Foot fungi flourish.

3. ALTA-CO 300 H.D. FUNGICIDE
for your daily, systematic washing of shower room floors. In economical solution (1 to 300), its action is both fungicidal and bactericidal, giving your floors the same hygienic sanitation you demand be taken by each user of your facilities.

Write for 16-page illustrated booklet, "Athlete's Foot—A Public Health Problem."

dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 5573

WORK BENCH and TOOL STORAGE COMBINED

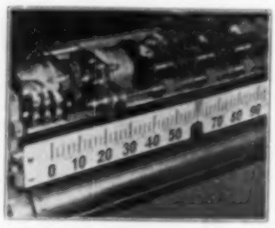
You will like this all-steel heavy-duty combination cabinet and work bench. Twelve-gauge steel top, suitable for mounting small machinery. Back and end stops are removable. Adjustable shelf*, swinging doors with three point locking device. Overall 36" x 24" x 34" high. Shipped set up.
* Extra shelves available

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan
SEND FREE Literature ... we're interested in: ... Benches ... Machine Tender Trucks ... Stools.
Company
My Name Title
Address

If you write maker identify as IEN - 5574

CONTROL . . Electronic instrument records, controls heat treating work

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO.
4456 Wayne Ave., Philadelphia 44, Pa.



The index setting drive

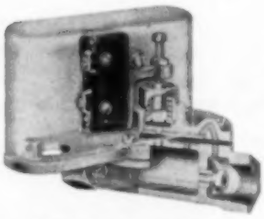
A sequence of heating, holding, cooling can be set up and maintained at predetermined temperatures and time intervals by application of this new ElectroniK strip-chart program controller. The instrument is available for actuation by thermocouple, resistance thermometer, dc. millivolt indication, or by the company's Radiamatic pyrometer. Separate motors provide the up-scale and down-scale set-point index drive and provide for 23 basic index drive speeds.

The assembly includes index operated, pen operated and differential operated switches. A maximum of three index operated switches can be obtained for the rate controller actuation, initial soaking or holding periods or to energize signals. One pen-operated switch can be supplied to actuate process-control equipment at a predetermined value of the measured variable. The differential-operated switch is employed to limit differential between the set point and the value of the variable if the process under control should fail to cool as rapidly as demanded. This switch closes circuits to energize cooling blowers when the differential between the pen and the set point exceeds the predetermind value.

If you write maker identify as IEN - 5575

SWITCH . . Flow operated to actuate circuit on flow rate change

Source: HAYS MFG. CO.
803 W. 12th St., Erie, Pa.



Guards against flow change

Shur-Flo automatic interlock is a new assembly of snap-acting switch, operating diaphragm and nozzle-equipped pipe-line fitting for signaling, control and equipment protection when flow in a pipe line fails or changes from a predetermined rate. Pressure differential established by the nozzle acts upon the spring-backed diaphragm to operate the switch mechanism.

The contacts remain either opened or closed, as initially determined, until change in pressure causes the diaphragm to move. Setting is established by selection of the orifice in the nozzle. Switch contacts rate 10 amp. on 110 volt ac. One of two types operates the switch when flow rate falls below a required predetermined minimum. The other operates when the flow exceeds a given maximum rate. The fitting is rated for 125-lb. line pressure. Fitting size is standard at ½ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5576

Turn to this NAYLOR Service

Naylor engineers have developed special techniques to hold fabrication work to extremely close tolerances. As a result, you can depend on Naylor to fabricate your fittings, manifolds, piping and other units to the most exacting specifications. Whether your needs are simple or complex, Naylor engineers will be glad to work with you.

Send specifications or drawings for quotation

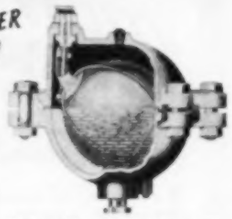
NAYLOR PIPE

NAYLOR PIPE COMPANY
1225 E. 92nd St., Chicago 19, Ill.
New York Office:
350 Madison Ave., New York 17, N. Y.

If you write maker identify as IEN - 5577

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting *air automatically* before it can cause damage.

IT'S SIMPLEX IT'S ACCURATE

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 50 years.

Write for free bulletin to Simplex Valve & Meter Co., Dept. 7, 6717 Upland Street, Philadelphia 42, Pa.

SIMPLEX
VALVE AND METER COMPANY

If you write maker identify as IEN - 5578

A HELPFUL PACKING DATA FILE

...YOURS FOR THE ASKING

Rhoads Tannate Packing Data File contains a handbook on the design and applications of mechanical leather packings; specifications sheet on Tannate Packings; and a special packing engineering form. All material is enclosed in a handy, 9 x 12 file folder for ready reference. Write for your free Packing Data File to J. E. Rhoads & Sons, 35 N. Sixth St., Philadelphia 6, Pa.

Tannate® CUP-U-VEE AND FLANGE PACKINGS
HYDRAULIC DISCS AND WASHERS

250th ANNIVERSARY YEAR
J. E. RHOADS & SONS
PHILADELPHIA • NEW YORK
CHICAGO • ATLANTA

If you write maker identify as IEN - 5579

STRONG STURDY SAFE

LOUISVILLE ALUMINUM A-JACKS

Sizes to 20 feet

A firm, solid support for scaffold planks. Extra resistance to twist and wobble built-in with special rung to side rail assembly. Corrugated aluminum rungs . . . extruded aluminum side rails . . fully riveted . . tapped with heavy gauge steel hinges . . the result; a tough, durable contractors' piece of equipment.

MANUFACTURERS OF A COMPLETE LINE OF ALUMINUM LADDER PRODUCTS

LOUISVILLE LADDER COMPANY
1101 W. Oak St., Dept. 3-A, Louisville 10, Ky.

If you write maker identify as IEN - 5580

"LIKE WATER off a DUCK'S BACK"

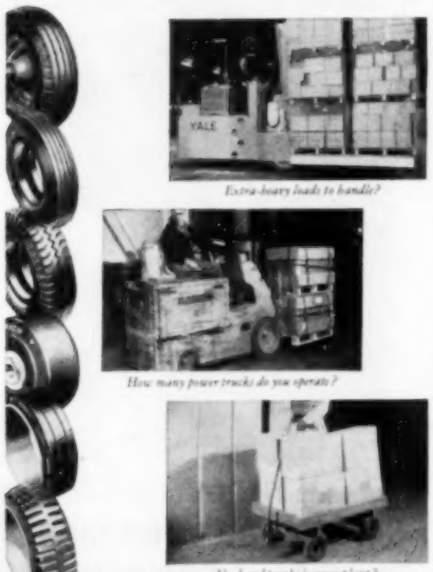
Moisture cannot penetrate the resilient rubber body of a JOY electrical connector . . . even mating pins and sockets are fully protected (when connected). Sealing action between plugs and sockets is automatically completed each time connections are made — through patented face construction of connectors.

Molded as integral Neoprene rubber units and permanently vulcanized to their cables — JOY plugs and inserts can't crack or shatter and are highly resistant to the deteriorating effects of grime, fluids, humidity and temperature changes. All the outstanding advantages of wear-resistant rubber are engineered to peak performance in JOY connectors. Write for descriptive bulletins. 749.2

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 5581

B.F.Goodrich



Extra-heavy loads to handle?

How many power trucks do you operate?

Use hand trucks in your plant?

TIRE AND WHEEL ANALYSIS saves you up to 50%

YOU can cut tire and wheel costs up to 50% on any materials handling job by using the right type, size and tread compound and following our suggestions. Proper maintenance alone cuts costs 10% to 20%. Let a trained B. F. Goodrich Tire and Wheel Analysis man look over your operations. Without charge or obligation he'll make impartial recommendations — impartial because only B. F. Goodrich makes industrial tires to meet *every* requirement.

Use the coupon for complete information on this new Tire & Wheel Analysis Plan.

A similar plan is available for manufacturers of industrial hauling equipment.

The B. F. Goodrich Co.
Department TW-175
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

Name_____
Title_____
Company_____
City_____ State_____

B.F.Goodrich

BFG dealers sell and service a complete line of industrial tires.

If you write maker identify as IEN - 5583

CLEANING . . Solution tank for small work from a screw machine

Source: PROTECTOSEAL CO.
1918-22 S. Western Ave., Chicago 8, Ill.

List is $12.50

Bench Can No. 5408 is a new soldered-steel assembly with a hinged cover and a spring-supported work platform. The unit is equipped with a hook to hang on the edge of a metal bench. Work pieces placed upon the tray can be submerged in cleaning fluid when the tray is pressed downward against the action of the opposing spring. The hinged cover permits closing the unit quickly in case of fire, so inflammable cleaning fluid can be used safely. Overall dimensions are about 10 by 7 by 8 inches. The unit is available to specification.

If you write maker identify as IEN - 5584

TUMBLING . . Paste concentrate to finish work in a tumbling barrel

Source: BLUE MAGIC CHEMICAL SPECIALTIES CO.
2137 Margaret St., Philadelphia 24, Pa.

Sample available for test run

Finish and excellent color are imparted to copper, brass, bronze and copper-alloy stampings, castings and other small parts that can be barrel tumbled by use of the company's new Blue Magic burnishing compound No. 11. The material is supplied as a free-flowing powder and can be used with coated abrasives, quarried stone, steel balls, shapes and other burnishing media.

About 1 lb. of the material is required in a 32 by 30-in. tumbling compartment, depending upon the nature of the work and the finish required. Detergency and rinsability are both excellent. Work leaves the barrel clean, free from chips, abrasives, oil traces, sludge and other foreign material.

If you write maker identify as IEN - 5585

FURNITURE . . Adjustable stool, steel frame, wood seat and back rest

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.

Catalog A252 is recent addition to the company's line of industrial furniture. It is made with a structural steel frame and is adjustable through 5 in. from minimum heights of 26, 30 and 34 inches. The hardwood seat is 14 in. in diameter. The back rest is adjustable to fit a worker.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5586

If you write maker identify as IEN - 5587

5 FIRMS ALONE PURCHASED. . . 2,165,458 LBS. SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

REPEAT ORDERS ARE PROOF OF A PRODUCTS MERIT

Many millions of pounds of Speed-Patch are in use. Five firms alone, purchased 2,165,458 lbs. The reason is simple. Speed-Patch is unequalled for patching worn, cracked, cratered floors. Easy to apply. Takes only one minute per square foot. No waiting to set or dry . . . truck over it immediately. It's tough, long-lasting, economical, ready-mixed. Write for details NOW!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7660-7650 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

If you write maker identify as IEN - 5588

SPRING WIRE

Absolutely uniform in gauge, finish and mechanical properties

ROEBLING is about the largest specialty wire manufacturer in America . . . and Roebling uniform quality always helps cut preparation time and boost production for users.

Typical of Roebling specialty products are mechanical spring wires including hard drawn, soft, annealed or oil-tempered M.B., H.B. and Extra H.B.; music wire; upholsterers' spring wire and valve spring wire . . . all in a full range of mechanical properties and finishes.

We can give you fast deliveries to meet your needs, right now! John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

If you write maker identify as IEN - 5589

Another **FIRST by ARO**

A REVOLUTIONARY SCREW DRIVER AND NUT SETTER

ARO's new push-button valve means *instant reverse action* . . . no need to remove from work . . . no stopping to turn levers . . . no wasted time.

Adjustable clutch (available with positive clutch) Length 7-11/16" . . . outside diameter 1-5/16" . . . weight 3.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. *Write for literature.* **The Aro Equipment Corporation, Bryan, Ohio.** Aro Equipment of Canada, Ltd., Toronto

ARO AIR TOOLS Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

If you write maker identify as IEN - 5590

Big Shaper Performance Small Shaper Price

The SHELDON 12" Back-Geared Shaper is neither too big, nor too small. It is just right for most shaper work in most tool rooms and shops.

In weight, design features, capacity and performance, it is a "big shaper." In price, operating cost and floor space, it resembles a "small shaper." It is the logical 1st shaper for the small shop and a cost-cutting tool in multiple installations in large plants.

Write for Catalog.

SHELDON
CHICAGO

SHELDON MACHINE CO., Inc., 4208 N. Knox Ave., Chicago 41, Illinois

If you write maker identify as IEN - 5591

wherever there's a guess

instead of a know

..... label it

with AVERY Kum-Kleen

LAID ON *labels*

HOW to label... Pressure-sensitive Avery Kum-Kleen Labels are quickly and easily applied—*Laid* on with a fingertip touch...they're self-adhesive and stick to any clean, smooth surface without moistening, soaking or heating... will not pop, peel or curl even under conditions of extreme temperature and humidity.

Avery designs and prints Kum-Kleen labels to any size, shape and color desired...supplies individually die-cut labels mounted on backing sheets or on rolls for high-speed labeling by Avery Label dispensers.

WHY label...
Wherever there's an *unanswered question*—a *guess* instead of a *know*, or a *hesitation* on identification or procedure—Label it with Avery Kum-Kleen Labels and save time, labor and costly mistakes!

WHAT to label...
NAMEPLATES • TRADEMARKS
GUARANTEE LABELS
INSTRUCTION LABELS
APPROVAL SEALS
HOW-TO-USE COPY
DIAGRAM LABELS
MASKING LABELS
INSPECTION LABELS
REPAIR RECORDS

WHERE can you use these labels in your business?

For Example... One electronic manufacturer uses Kum-Kleen Labeling to identify component parts and to give vital information to the users of a radio-active meter. Chances are there's some way these labels can be of help to you in your business.

WRITE now for samples and further information.

AVERY ADHESIVE LABEL CORP.

117 Liberty St., New York 6 • 608 So. Dearborn St., Chicago 5
1616 So. California Ave., Monrovia • Offices in Other Principal Cities

If you write maker identify as IEN - 5593

THREADING . . Motor driven machine, 1/8 to 2 in. pipe, 1/4 to 2 in. bolts

Source: RIDGE TOOL CO.
352 Clark St., Elyria, Ohio

The work rotates

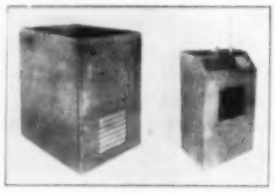
New die head known as Quadritype features the assembly of this new Ridgid "500" pipe and bolt-threading machine. The head is adjustable without moving it or the dies from the machine to thread 1 to 2-in. pipe. It can be set standard, over or under size. The machine also takes a recently improved Dualtype head, one for 1/4 and 3/8-in. pipe and one for 1/2 and 3/4-in. pipe. Either size can be selected in a given head on the machine. Available equipment includes Monotype die heads for pipe from 1/8 to 2 in. and for bolts from 1/4 to 2 inch.

The universal geared driving motor is provided with forward-reverse control for operation on 110-volt ac. or dc. It has sufficient power to thread pipe to 12 in. when geared tools are employed. The assembly includes a thread and length gage, a 5-qt. oil reservoir, a floating wheel-type cut-off and a reamer. The die head, the cut-off and the reamer are assembled to swing up and back so they are out of the way when they are not required. The machine is available to mount on a bench or on stationary or portable stands.

If you write maker identify as IEN - 5594

VENTILATING . . Cooler-heater unit for crane cabs, also filters the air

Source: DRAVO CORP.
352 Neville Island, Pittsburgh 25, Pa.



To help the crane man

Clean filtered air is supplied at a comfortable temperature for the operator of a crane equipped with this new Model C-3SP combination of refrigerating, heating and filtering unit. Known as Crane Cab Cooler, the unit will maintain a temperature of 80 to 85 deg. in the summer when ambient temperature is 136 degrees F. It will keep the cab temperature between 68 and 72 deg. in the winter when ambient temperature is zero.

The new unit has been designed particularly for installations such as those over pickling vats, aluminum, reduction pots, foundries and plants handling copper, lead, magnesium, cement, chemicals. Dirt, dust, gas, fumes and odors are kept out of the cab.

Two parts include a condenser section measuring 33 by 26 by 38 in. and an evaporator section measuring 23 by 17 by 38 inches. The condenser can be installed at any convenient position on the crane so only the evaporator section requires assembly in the cab as the point of use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5595

WIDELY USED TO

STAKE
MARK
SWAGE
CUT OFF
RIVET
CRIMP

LIGHTNING-FAST ELECTROPUNCH

PRODUCES UP TO 10,000 PIECES PER HR.

This versatile, low cost electric impact hammer produces up to 10,000 pieces per hour using automatic switching — as high as 5,000 pieces per hour with hand or foot switching. Ideal for steel stamping, inspection or identification marks on small defense parts.

ELECTROPUNCH is portable — plugs into any 115 V A. C. outlet. Lightest model (illustrated) sells for only $90.75.

ELECTROPUNCH quickly pays for itself. Investigate its possible applications in your plant now!

Write for descriptive folder.

BLACK & WEBSTER, INC.
Dept. 17, 445 Watertown St., Newton 58, Mass.
Phone: Frank Webster Bigelow 4-6370

BEND PUNCH DIMPLE

If you write maker identify as IEN - 5596

SENSITIVE, PRECISE PRESSURE-VACUUM CONTROLS

TYPE G9

The pressure vacuum control illustrated is an accurate, highly sensitive, precision-built unit. It may be had with an internal or external, calibrated or uncalibrated adjustment. It is water-tight unless the adjustment is external.

It is designed for applications requiring constant repeatability of any on-off differential between .2" and 10" w.c. For full details send for bulletin #5-1.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 5597

SAFETY FOR YOUR MEN... VALUE FOR YOU with U. S. NEOPRENE GLOVES

They help prevent costly accidents. • They withstand gasolines, oils, greases, and corrosive chemicals such as sulphuric, chromic, and muriatic acids, caustic and plating solutions. • The rough-surface fingers assure positive easy gripping. • They're comfortable because the curved finger construction conforms to the natural curve of hand, eliminates straining and pulling. Highly flexible, they permit easy, natural working motions. These "U. S." gloves withstand tough service. Full range of sizes, lengths and weights. "U. S." technical men will be glad to analyze your glove needs and recommend the correct glove for *your* job.

U.S. INDUSTRIAL GLOVES

UNITED STATES RUBBER COMPANY

If you write maker identify as IEN-5599

FAIRBANKS-MORSE GENERATING SETS

Many things can cause power failure—fires, explosions, traffic accidents, human error. And all of them can lead to injuries, property damage—even death. Then may come lawsuits and staggering debts.

Your own business is not immune. But the severity of the disaster can be minimized if you have a Fairbanks-Morse Generating Set standing by to cut in instantly when city or rural high line service is halted.

A Fairbanks-Morse Generating Set is the cheapest insurance you can buy! Ask your local Fairbanks-Morse dealer to show you why. Or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

If you write maker identify as IEN-5600

ONE SOURCE

...for EVERY TYPE of abrasive in high-speed PORTABLE GRINDING...

...used on EVERY TYPE of portable grinding operation in metalworking...

...more proof that only CARBORUNDUM
TRADE MARK
offers ALL abrasive products ...to give you the proper ONE

"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

If you write maker identify as IEN-5602

HANDLING . . Plastic coated basket designed to carry fifteen dozen eggs

Source: CROWN POULTRY EQUIPMENT CO.
352 Cortelyou Lane, New Brunswick, N. J.

Collector's item

Model 2752 is a new plastic-coated wire basket, particularly to handle eggs. The wire is in welded assembly. The handle accurately matches the basket rim so it can be released to fall without danger of striking any eggs. The basket base is curved upward in the center for air circulation and so the basket will sit firmly on an uneven surface. Several units can be nested. Packaging is 12 to a carton for a gross carton weight of about 42 pounds. Overall dimensions are 14 in. in diameter at the top, 9 in. at the bottom, 10 in. in height.

If you write maker identify as IEN-5603

FURNITURE . . Folding table, caster mounted, opens to 12 feet

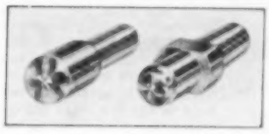
Source: SEATING INC.
3563-67 Wooddale Ave., St. Louis Park 16, Minn.

Textolite, measuring 2½ ft. in width by 6 ft. in length, is employed in each of the two half tops in this new table. The top is mounted on a welded steel chassis with baked enamel finish. Benches measuring 9 in. in width are assembled on both sides. The table locks in both closed and open position. List price is $192.

If you write maker identify as IEN-5604

ENGRAVING . . Diamond cutters for sharp line marking to 0.005 inch

Source: H. P. PREIS ENGRAVING MACHINE CO.
145 Industrial Branch, Hillside, N. J.



Send sample to mark

Designs can be marked on a work surface or letters or numbers engraved by application of a new Panto Cutter in the company's pantograph engraving machine. The cutter carries a diamond that is faceted to a sharp point. With rotation at high speed in the engraving machine spindle, the diamond produces a clear mark to a depth of 0.005 in. depending upon the material and the degree of hardness.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5605

DOUBLE-SWEDGED (PAT. APPL. FOR) RUNGS!

withstand 4,600 inch-pounds torque test

This exclusive WERNER feature provides ever-straight, never-twist side rails. For you, this means a stronger, safer, longer-lasting, lightweight ALUMILADDER.

ALUMILADDER Extensions give you lightweight aluminum plus WERNER's save-weight, "fire-ladder" construction to conserve physical energy.

Extensions available with flared or straight bottoms.

Write Department IEN for complete, up-to-date ALUMILADDER catalog — Extensions, Singles, Steps.

This Warranty Seal appears on all Werner ladders

This ladder is guaranteed by the manufacturer to meet the requirements of the safety code covering material, construction, and design as adopted by the Metal Ladder Manufacturers Association. ALUMILADDER Extensions exceed specified MLMA safety factors.

Manufacturers - Basic Aluminum Extrusions and Roll-formed Products

WERNER CO. INC. ALUMINUM

If you write maker identify as IEN-5606

stop blink OF AGING LAMPS

Worn-out lamps won't blink when your fluorescent fixtures use G-E Watch Dog starters. These starters automatically turn off the flickering lamp. When lamp is replaced, push the red reset button, and fixture is back in service. Watch Dogs prevent frayed nerves caused by flickering lamps and reduce emergency calls on maintenance men. Watch Dogs last longer, too. So buy fixtures which display the Watch Dog tag or label. Section C2-542, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

Look for the G-E Watch Dog* tag ON FLUORESCENT FIXTURES

*Registered Trade-mark of General Electric Company

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN-5607

TRAFFIC NEVER STOPS

***when you repair your floors with* PERMAMIX**

Easy to apply—sets instantly—long wearing for year around use indoors or out—WILL NOT FREEZE—can be stored indefinitely and used in any temperature—lowers maintenance costs amazingly.

Here's all you do: Clean hole in any type floor, spread primer supplied in drum, fill in with PERMAMIX, tamp and dust with cement or floor dust, resume traffic immediately. It's that easy, for PERMAMIX feather edges and no cutting or chipping is required. No skilled labor is necessary, you need no special equipment, you have no mixing, waiting or production delays when you repair or patch your floors the easy, fast PERMAMIX way. Comes in handy, durable 50 lb. net weight drums.

Write or call for full details

PERMA Mix

PERMAMIX CORPORATION
218 N. La Salle St. Cent. 6-1785 Chicago 1, Illinois

If you write maker identify as IEN-5608

How HAYNES Alloy MACHINERY PARTS Reduce Machinery Maintenance . . .

★ 23 PAGES ★ 61 ILLUSTRATIONS

Get your copy of this new booklet describing long-wearing HAYNES alloy machinery parts. It describes over 30 types of cast and wrought alloy parts with unusually high resistance to corrosion, abrasion, or heat.

HAYNES alloy machinery parts have already made large savings on down time and machinery maintenance for countless manufacturers.

For a copy of the booklet describing the parts, write to our General Offices.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Haynes" is a trade mark of Union Carbide and Carbon Corporation.

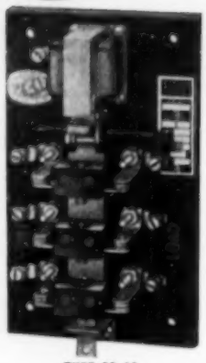
If you write maker identify as IEN-5609

NEW ZENITH® MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED

★ FINE SILVER CONTACTS

★ SIMPLIFIED WIRING



TYPE SC 33

This ZENITH Contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 - 25 amps. Size 2 - 50 amps.

Either size can be supplied in any number of poles.

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith. Write now for your copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN-5610

it feels heavier | ... and heavier

and HEAVIER... | WHEN YOU HANDLE IT BY HAND

USE

RAYMOND

Hydraulic
PALLET LIFT TRUCKS

- Let one man do the work of two men or more with a RAYMOND Hydraulic Pallet Lift Truck. You'll save time, save manpower, save money!
- What's the secret? Hydraulic power does the heavy lifting. Just a few pumps on the foot pedal and your load is set for smooth, easy hauling.
- RAYMOND Pallet Trucks squeeze into tight quarters . . . feature effortless pallet entry. Lightweight model shown here has 2,000 lb. capacity. Also available in Heavy Duty models with 4,000 or 6,000 lb. capacities.

MODEL L2P

DESIGNED FOR FAST HANDLING

RAYMOND Low-Lift Rider-Type Electric Truck. Travels up to 6 mph empty, 5 mph loaded. For long hauls, stock picking, loading, unloading. 4,000 lb. capacity.

RAYMOND

Electric Industrial Trucks
Hydraulic Elevating Equipment

The RAYMOND CORPORATION
Formerly (1936) Raymond Corporation
3574 Madison Street, Greene, N.Y.

Send for Bulletins

Gentlemen: Please send me Bulletin 207, showing your full line of Hydraulic Lift Trucks. Also Bulletin 710 on your new Low-Lift Electric Truck.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN-5612

PROTECTING . . Face shield takes interchangeable window pieces

Source: BOYER-CAMPBELL CO.
6538-42 St. Antoine St., Detroit 2, Mich.

Windows snap fasten in place

A plastic shield for general use, a fiber front with a glass holder for welding operations and a screen window to protect an operator against scale and heat are all interchangeable on the head gear of this new Model-301 face shield. The design provides ample clearance for spectacles and goggles. It is adjustable for varying head sizes. The visor and window can be hinged up to stand out of the way when not needed.

If you write maker identify as IEN-5613

LUBRICATING . . Lead bearing grease to plate wear surfaces, fill cracks

Source: KNAPP MILLS INC.
23-17 Borden Ave., Long Island City 1, N. Y.

Packaged in 25 to 500 lb. units

Lead-Lube is a new grease containing pulverized lead dust that remains in permanent suspension after the grease is processed. The lead plates out over the wearing surfaces. It fills cracks and imperfections to produce a surface with low coefficient of friction.

Type K and Type KM are the two forms in which the grease is available at present. Both can be applied cold to open gears and bearings. Type K is for applications subject to high temperature. Type KM is for general heavy duty.

If you write maker identify as IEN-5614

MIXING . . Reciprocating stirrer for laboratory use, 1 to 2 in. stroke

Source: RESEARCH APPLIANCE CO.
Box 413-A, West View Road, Pittsburgh 9, Pa.

Churning action

Reciprocating rod operates vertically in a guide bushing in this new No. 601 electric stirrer. It is fitted at its lower end with a chuck to take a ¼-in. rod and at the top with a cross-head in which a crank pin operates. The pin can be backed out and placed in different positions on the face of the crank disc for a stroke length of 1, 1½ or 2 inches. A small drive motor operates on 110-volt 60-cycle ac. Crank speed is 120 rpm. The dimensions are 9 by 4 by 8 inches. Weight is about 5 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5615

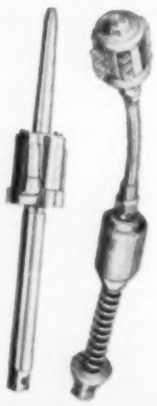
Wilsonize

- to beat the clock on down-time
- to get better tube maintenance

Choked or clogged tubes lower the efficiency of your tubular apparatus . . . result in costly down-time. But with Wilson Tube Cleaners on the job, even the toughest deposits are thoroughly removed from tubes of boilers, heat exchangers, stills, evaporators, etc. Tubes are left spic-and-span, ready for more service. And best of all, Wilson Tube Cleaners do their work in a hurry . . . help you beat the clock on down-time.

You get equally efficient service from Wilson Tube Expanders. They make rolling of new tubes . . . re-rolling of old tubes . . . quick and easy. These precision-manufactured tube expanders insure solid seating. They are available in all sizes, flaring and non-flaring types.

TWO BULLETINS—48-page Catalog describing complete Wilson Tube Cleaner line and up-to-the-minute Tube Expander Catalog—are available. A single request brings both.



THOMAS C. WILSON, INC.
21-41 44th AVENUE, LONG ISLAND CITY 1, N. Y.
CABLE "TUBECLEAN" NEW YORK

WILSON

WILSON TUBE CLEANERS • WILSON TUBE EXPANDERS

If you write maker identify as IEN-5616

Take surface temperatures quickly, accurately... with the

Pyrocon

The handy Alnor Pyrocon is unequaled for quick, accurate reading of all surface temperatures . . . whether surfaces are metallic or non-metallic, flat or curved. Accurate temperatures are easily understood on the Pyrocon's direct reading scale face . . . without interpolation or need of conversion tables. A wide selection of thermocouples and extension arms permits adaptation to many types of service. For complete details and prices, send for Bulletin No. 4257. Illinois Testing Laboratories Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN-5617

Depend on AUTO-LITE

FOR TEMPERATURE INDICATION

Model G Thermometer (one-to-one ratio, liquid filled type) Priced from $18.

Model V Thermometer (vapor pressure type) Priced from $10.25.

Auto-Lite Indicating Thermometers are available in many types and sizes, with a choice of temperature ranges and mountings to meet your needs. Send for catalog.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION • TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

AUTO-LITE
INDICATING & RECORDING THERMOMETERS

If you write maker identify as IEN-5618

The EASY WAY to use SQUARE BITS in ROUND HOLES

ELIMINATES VIBRATION

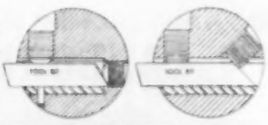
Time and money can be saved by using square slotted sleeves in processing boring bars, cutter heads, and tool holders for accurate work.

LOOK!

The efficient and inexpensive method of mounting a tool in a boring bar. No filing of square holes when using these sleeves.

— SUGGESTIONS FOR INSTALLATION —

Just ream a hole to fit the sleeve. Drill & tap two more holes - one to hold the tool in place and the other for adjustment.



FORMED TOOLS CO.
43045 Grand River • Novi, Michigan

DISTRIBUTORS NOTE: Some territories still open.

If you write maker identify as IEN-5619

Steel Strapping Dispenser

New Acme Steel tool saves time and effort in packing and shipping

This new Acme Steel E4CO Dispenser can hold and cut to length two coils of heavy duty steel strapping at the same time.

One easy downstroke of the 30" hand lever cuts any two-coil combination of ¾", 1¼" or 2" strapping. Efficient shear mechanism features high grade tool steel blades for long service. V-belt feed control minimizes strap over-run.

If you use flat steel strapping to reinforce large shipping containers, to bundle heavy units together, or to brace carload shipments . . . this dispenser can help you. Call the Acme Steel service office nearest you or write Acme Steel Products Division, Dept. IEN-52.

ACME STEEL

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

If you write maker identify as IEN-5620

For fast, uniform case hardening at low cost

Investigate Du Pont Molten Salt Baths

PLAIN CYANIDE

For light cases to 0.010"—At temperatures of 1400° to 1600°F., cyanide baths supply nitrogen as well as carbon to steel surfaces—greatly improving wear resistance. Distortion is held to a minimum. Bath is easily maintained by addition of Du Pont replenishing salts.

ACCELERATED SALT WS*

For medium cases to 0.040"—Salt has excellent carburizing activity from 1500° to 1650°F. High fluidity of bath and high cyanide concentration eliminate bail out under normal conditions. Salts composing bath and decomposition products *are completely water soluble.* *Water Soluble

CARBURIZING SALT

For deep cases in excess of 0.025"—Predominantly carbon cases are quickly and economically obtained at 1650° to 1750°F. Low cyanide concentration holds cyanide decomposition to a minimum—even at high temperatures. Case depth is controlled and uniformity assured by fast, even heating.

Technical assistance *and advice in the selection of heat treating materials can be obtained by writing or calling our nearest district office. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.*

DISTRICT OFFICES:
Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
El Monte (California) • New York • Philadelphia

DU PONT
CYANIDES AND SALTS FOR STEEL TREATING

DU PONT

150th Anniversary

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

If you write maker identify as IEN-5622

ROCK DRILLING . . Carbide core drill for ¾ to 5 in. holes in hard masonry

Source: NEW ENGLAND CARBIDE TOOL CO.
58-62 Brookline St., Cambridge 39, Mass.

One man does the job

Thunder-Core trade names a new carbide-tipped core drill for portable hammer application to cut through materials such as concrete with bluestone or granite aggregate, or solid granite. The cup-shaped drill cuts a ring to form a center core and can be driven to a depth of 4 in. before the core fills the cup. At this point the operator can remove the drill, break out the core that has been formed and start again.

If you write maker identify as IEN-5623

POLISHING . . Tubular knit cloth packed in ½ to 25-lb. rolls

Source: RITTENBAUM BROTHERS INC.
697 Houston St., N. E., Atlanta 5, Ga.

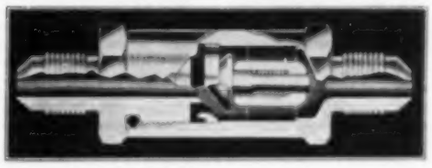
Also replaces baling burlap

The company announces quantity production of a new tubular knit polishing cloth in rolls from 15 to 20 in. in width. The cloth is made of a soft light-weight yarn. Because it is new it can be relaundered and reused many times. It leaves no lint. Its soft finish will not mark a fine surface.

If you write maker identify as IEN-5624

VALVE . . Pneumatic check design to prevent reverse flow in a pipe line

Source: CORNELIUS CO.
Box 905-A, Minneapolis 1, Minn.



Aluminum or stainless steel

A rubber seat made of material not subject to attack by lubricating oil engages a cone-shaped poppet in this new valve. It seals against reverse flow when forward movement of air is stopped in the line and the spring back of the poppet moves it into closed position. The poppet spring lies in protected position so it is not exposed to the air flow. The valve is designed particularly for aircraft use. It has been tested against leakage at pressures to 4,500 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 80*

If you write maker identify as IEN-5625

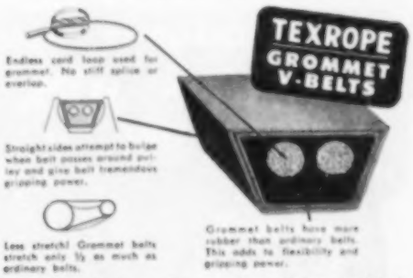
Here's the smart angle that helps you save expense of power truck use. Let the Barrett EX Pallet Truck handle short hauls, load spotting, general pallet movement—all at lower cost. Fork types for single or double-faced pallets; also platform types...2500, 4000, 6000 lbs. capacity. Hydraulic Lift—4". Frame widths—25" and 27". Investigate Barrett before you invest.

Write today for complete details and specifications on new and improved Model EX Pallet Lift-truck

BARRETT-CRAVENS COMPANY
4641 S. Western Blvd., Chicago 9, Illinois
Representatives in all Principal Cities
Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Canada

BARRETT
One man does more than 3 or 4 . . . with a Barrett

If you write maker identify as IEN-5626



Get 20-50% Longer Belt Life!

TEXROPE GROMMET belts cost same as ordinary belts yet last longer, grip better!

Patented grommet belts last 20 to 50% longer than ordinary belts, depending on the service. The more severe the service, the greater the increase over ordinary belts. The reason? There is no overlapping cord section as in ordinary belts.

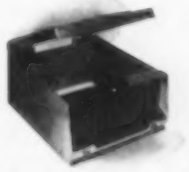
In addition, *Texrope* grommet belts have more rubber in relation to belt size than ordinary belts. Without that stiff overlap, they're more flexible, grip pulleys better. Size for size, grommet belts give ⅓ more gripping power, pull heavier loads with greater safety factor.

Call your nearby Allis-Chalmers distributor or district office and specify *Texrope* grommet V-belts. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Texrope is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-3714

If you write maker identify as IEN-5627

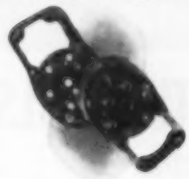


Beauty of mahogany mottle finish, fine details, scratch-resistances, light weight and strength at reasonable cost feature this cabinet for Philco radio-phono combination. It's BAKELITE BM-780 General-Purpose Phenolic.

Molded by The General Industries Co., Elyria, Ohio, and American Insulator Corp., New Freedom, Pa.

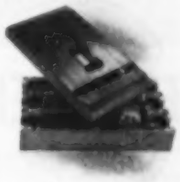
Strength and stability! This impeller for Sears, Roebuck's Kenmore Dishwasher is made of BAKELITE Water-Resistant, Improved-Impact Phenolic BM-13080. It stands up under whirling scalding water blasts of hot air, attack by soap and detergents.

Molded by Martindell Molding Co., Trenton, N. J.



Heat resistance, good electrical properties combine in this magneto distributor plate for heavy-duty automotive equipment. It's BAKELITE BM-18425 General-Purpose Phenolic with improved electrical insulation qualities.

Made for American Bosch Corp. by Specialty Insulation Mfg. Co., Hoosick Falls, New York.



Intricate design and electrical resistivity—up to 600 volts AC, 250 volts DC, 10-600 amps.—are two of many features of this I-T-E Circuit Breaker case molded of black BAKELITE General-Purpose Phenolic BM-2498.

Made for I-T-E Circuit Breaker Co., Philadelphia, Pa., by American Insulator Corp., New Freedom, Pa.

Why PHENOLIC PLASTICS get the job!

The wide variety of BAKELITE Phenolic Plastics means that you can pick the *right* combination of properties to suit your particular purpose.

And with *all* BAKELITE Phenolic Plastics, you'll get the plus-factors of strength, beauty, economy, ease of production. Their resistance to chemicals and moisture, good electrical properties, long service life, and light weight are added features you can't afford to overlook.

Select the phenolic molding material that's best for your application . . . put it to work for your product. It means improved design, better performance, more saleability! Our Engineers will be glad to help you. Write Dept. DW-14.

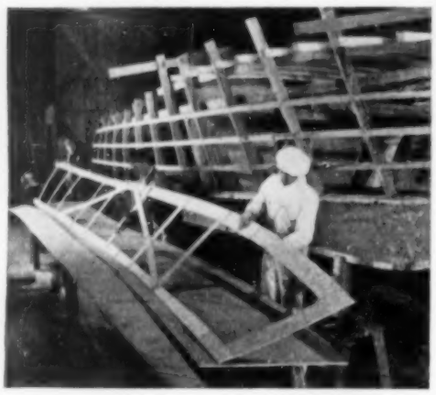
BAKELITE
TRADEMARK
PHENOLIC PLASTICS

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.
In Canada:
Bakelite Company (Canada) Ltd., Belleville, Ont.

If you write maker identify as IEN - 5629

If you write maker identify as IEN - 5630



EXTRA-LENGTH PANELS

Speed Construction

Many industrial, construction and marine uses have proved G-P Giant Scarfed Panels the ideal building material whenever long "wide boards" are specified or when large areas require coverage. Besides speeding up construction, reducing dead weight and adding strength, Giant G-P Scarfed Panels permit use of fewer or lighter frame members, eliminate joints and cut finishing costs.

Quality-controlled to assure uniform thickness and rigidity, easy-to-fabricate G-P Scarfed Panels are available in natural 12 ft. or scarfed 14 ft. and 16 ft. lengths. Custom sizes of any length or thickness can be made to fit your specifications.

GEORGIA—PACIFIC PLYWOOD COMPANY

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Columbia, Detroit, Lancaster, Louisville, Memphis, Nashville, Newark, New Hyde Park, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

For complete data, fill in and mail this coupon today

Georgia-Pacific Plywood Company
614-5E North Capitol Way
Olympia, Wash.

Please send me Scarfed Panel data.

NAME .....
FIRM NAME .....
FIRM ADDRESS .....
CITY ..... STATE .....
POSITION .....

If you write maker identify as IEN - 5632

PULVERIZING . . Impact machine to powder dry grindable materials

Source: MEAD MILL CO.
14618 E. 7 Mile Road, Detroit 5, Mich.

Rolls to the job

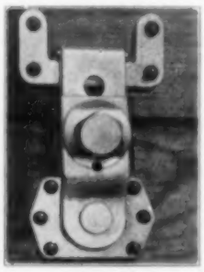
New assembly employing a caster-mounted stand is available for the smallest of the company's impact-type pulverizing machines, previously described IEN-82-52. The standard 1-hp. mill with rating to 100 lb. of material per hr. mounts on the stand as shown in the illustration. Drive is by a 1-hp. ball-bearing motor with belt connection for rotation at 5,000 rpm. Overall dimensions are about 23 by 29 by 52 inches.

The rotor shaft is mounted in flange-assembled ball bearings to carry a tool-steel beater disc and alloy-steel impact beaters as in the original design. Material fed in at the side of the upper housing is acted upon by the beaters and corrugated impact rings for size reduction to pass through tool-steel bar screens available in five mesh sizes to meet requirements.

If you write maker identify as IEN - 5633

FASTENING . . Slide type latch locks over center in holding position

Source: SIMMONS FASTENER CORP.
1010 N. Broadway, Albany 1, N. Y.



No springs

New size has been added to the company's Link-Lock latch, previously described IEN-9485-51. The new unit exerts a 1,500-lb. pull-down pressure and will carry a 4,000-lb. tension load. It is moved between open and closed positions by turning a bolt head integral with an off-center pin. The turning movement carries the pin a little beyond center to lock in holding position. It can be further secured in this position by inserting a screw when the bolt washer has been brought around to engaging position with an opening in the latch. The new unit is designed particularly for structural use as in fastening panels in prefabricated buildings and to secure covers on large storage containers. There is sufficient pull-down pressure to assure a water-tight seal with a gasket.

If you write maker identify as IEN - 5634

SHIPPING . . By air through New York the subject of 36-page information booklet

Port of New York Authority
111 Eighth Ave., Room 1516, New York 11, N. Y.

March 1952 Edition of "A Guide to Air Shipping" brings up to date information intended to assist in expediting air shipments to and through New York. It covers problems involved in air shipping, rates and specific data.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5635

KEYSTONE JUNIOR CONVEYORS

THE CONVEYOR THAT GIVES MAXIMUM FLEXIBILITY
AT LOW INITIAL COST!

- Load capacity to 80 lbs. per trolley.
- Up to 15,000 lbs. live loads on a single sprocket or caterpillar drive. (Multiple drives for heavier loading)
- 9 inch minimum radius on horizontal turns.
- No track welding, cutting, or fitting required.
- Trolleys with grease packed ball bearing wheels.
- Rivetless drop forged chain. 2" pitch.
- 2 Foot minimum radius on vertical turns.
- 100%, prefitted, bolted joints. Easily installed.
- Overhead or floor supported.
- Speeds from 3 inches P. M. to 80 feet P. M.

KEYSTONE JUNIOR CONVEYORS are identical to their big brothers — the 348 and 458 which are the accepted standard of the world. These conveyors are in daily use in hundreds of plants throughout the country. At your request our local field representatives will show you a KEYSTONE JUNIOR CONVEYOR in operation.

WRITE FOR BULLETIN 511.

KEYSTONE CONVEYOR CO.
21752 W. EIGHT MILE • DETROIT 19, MICH.

If you write maker identify as IEN - 5636

Get the benefits of greater seeing comfort — reduced brightness contrasts — with the new DIFFUSER TYPE Fluorescent Fixtures — pioneered by Wheeler! Apertures located in the top of the all-white porcelain enameled steel reflector direct approximately 5% of the light upwards . . lessen contrasts . . provide more comfortable seeing and working conditions. Fixtures are available for use with all Slimline and General Line Fluorescent Lamps. Write Wheeler Reflector Company, 275 Congress Street, Boston 10, Massachusetts.

Wheeler REFLECTORS

MADE BY SPECIALISTS IN EQUIPMENT SINCE 1881

If you write maker identify as IEN - 5637

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880 FACTORY-MILL & WAREHOUSE TRUCKS

Cutting Handling Costs since 1880

3000-lb capacity

Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

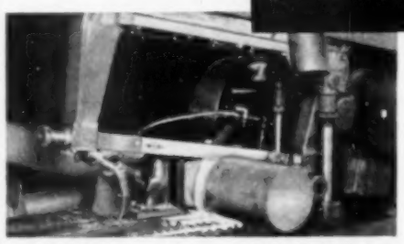
WRITE TODAY for catalog and prices

Manufactured by HOOSIER FENCE CO. Inc.
Div. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 5638

BARNES GIVES YOU THE BEST IN POWER BLADES

"LOOK FOR THE DIAMOND"



Every Barnes Power Hack Saw blade is individually Rockwell tested to assure you the fine quality for which Barnes blades are famous.

Your Industrial Distributor will help you select the best blade for your job.

ESTABLISHED 1919 W. O. BARNES CO., INC.
1297 TERMINAL AVE. • DETROIT 14, MICH.

If you write maker identify as IEN - 5639

LAUGHLIN SAFETY HOOKS • • •

Drop forged steel hook with pressed steel or cast bronze latch, stainless steel spring and rivet attached to hub of hook forging.

Fifteen sizes for safe working loads from 1200 to 30,000 lbs. Available in eye, shank or swivel patterns.

BEST POSSIBLE PROTECTION FOR EVERY LOAD

Latch locks the load, leaves 80% of regular throat opening.

Safety Hooks are **one** item in Laughlin's line of **1500** types and sizes of wire rope and chain fittings — both standard and exclusive. For complete information, send for free catalog No. 150.

THE THOMAS LAUGHLIN CO. 51 FORE ST., PORTLAND, ME.

LAUGHLIN
THE MOST COMPLETE LINE OF WIRE ROPE AND CHAIN FITTINGS

If you write maker identify as IEN - 5640

How Pittsburgh Brushes

IMPROVE QUALITY!

1. Finishing stainless steel sheets!

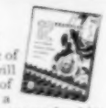
Brushes formerly used by the Eastern Stainless Steel Corp. to produce a dull satin finish on stainless steel sheets were unsatisfactory. Ridging and uneven finish had to be eliminated from these sheets, used to press laminated plastics. Pittsburgh engineers recommended a Spiral Wound Tampico rotary brush—now uniform finishes are no problem!

2. Cleaning welds!

The Globe Company required a brush that would get welds in meat handling equipment *completely clean* and smooth—pockets left in welds might trap food particles. Pittsburgh suggested a coarse wire, extra heavy fill rotary brush. Now pockets are completely eliminated and finishing operations are speeded up.

3. Reconditioning automotive connecting rods!

How to rid reconditioned engine rods of grease, gum, etc., without harming precision surfaces? When Federal Mogul Service presented this problem to Pittsburgh engineers, Pittsburgh recommended a number of standard brushes, mounted on two- and four-horsepower motors. One man now cleans up to 500 pieces a day, *without damage* . . . problem solved!



Let Pittsburgh Engineers Solve Your Brush Problems. Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical and economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh brushes can help cut your operating costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M-5, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH Power Driven BRUSHES

BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

If you write maker identify as IEN - 5642

PUMP . . Single stage centrifugal for fluids containing abrasive solids

Source: MORRIS MACHINE WORKS
45 E. Genesee, Baldwinsville, N. Y.

One of the larger sizes

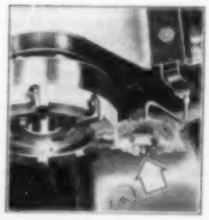
Sizes, based on discharge diameter, range from 16 to 72 in. in this recently improved Type-MF mixed-flow centrifugal pump. The construction features the company's design of dredge-pump seal in which circulating losses are prevented by renewable wearing plates for which axial adjustment is provided. Adjustment can be made without dismantling.

Speed range is between 1,160 rpm. for the smallest unit to 225 rpm. for the largest one depending upon the head. It is maximum at 75 feet. Liquid handling capacities range from 5,000 to 200,000 gpm. Intended services are in connection with drainage, flood control, sewage treatment, condenser and evaporator circulating, dry-dock unwatering, plant and process water supply. Standard construction is in semi-steel. The pump will operate satisfactorily with liquids containing 5 per cent of fine abrasive solids in suspension.

If you write maker identify as IEN - 5643

MILLING . . Cutter cleaning brush removes chips from cutter blades

Source: DETROIT MILLING CUTTER CO.
28623-27 N. Grand River Ave., Farmington, Mich.



Chip Remover designates a new assembly of circular wire brush mounted on a non-magnetic support arm on ball bearings that can be adjusted to increase or decrease resistance to rotation. The arm is secured to a magnetic base so the brush can be mounted to contact a milling cutter as shown in the illustration. The bearing is adjusted to set up the small amount of drag as the brush rides over the cutter teeth to remove any clinging chips.

If you write maker identify as IEN - 5644

PROCESSING . . Abrasive machine grinds nylon bristles to hold paint

Source: EDWARD E. ROBINSON INC.
93-97 Park Ave., Nutley 10, N. J.

Note ring of chucks

The plain ends of nylon brush bristles are abraded by application of this new machine so the bristles are softened for some distance back from their ends. As a result the bristles will hold paint in manner comparable to natural paint brush bristles of the best quality.

The machine mounts a ring of chucks holding tufts of the bristles to be processed. The chucks rotate in a head and at the same time move around with it to pass over the tops of two parallel rows of power-driven grinding wheels. These wheels act upon the lower ends of the tufts to produce the desired result.

If you write maker identify as IEN - 5645

TRUCK . . Engine driven tractor will pull 6 ton load on level floor

Source: TRUCK-MAN DIVISION
591 Liberty St., Jackson, Mich.

About $1000

True-Tor Model DR is a new unit in the company's line of engine-driven trucks in which an air-cooled gasoline engine rating about 6 hp. is mounted in turret assembly on the front dual driving wheel. Engine and wheel assembly turn as a unit for steering and for forward or reverse movement. The truck can be turned in its own length. Mounting is on pneumatic tires. Details are included in an available 8-page catalog.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5646

new! revolutionary!

Pilot-Master AIR CONTROL VALVES

Ingenious Design • Many Applications

New piston-operated poppet design in 2, 3 and 4-way Master and Pilot-Master Valves—also 10 new Pilot Valves for remote control.

ADVANTAGES
- Unique Removable Cartridge
- Fewer Valves to Stock
- Fewer Parts to Stock
- All-Electric or All-Pneumatic Hook-Ups

GET THE FULL STORY

All Sizes ¼" to 1¼"

Every Design Engineer and Tooling Specialist will want Bulletin 231—just off the press. Contains full details on the complete P-M line.

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave., Chicago 24, Ill.

If you write maker identify as IEN - 5647

PROTECT WORKERS AGAINST HARMFUL CONCENTRATIONS of AROMATICS

. . . with the NEW

M.S.A.

AROMATIC HYDROCARBON DETECTOR

Workers are better protected against harmful concentrations of aromatics when this accurate, compact instrument is on the job. Concentrations are easily and quickly determined on the cylindrical scale which is separately graded for benzene, toluene and xylene. The length of stain, which increases with increasing concentrations permits testing crews to improve ventilation or alert workers when "safe limits" are exceeded.

The instrument is fast and simple in operation, and requires no special training to use. For complete details, write now for Bulletin No. DD-1.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pa.
At Your Service: 66 Branch Offices in the United States

If you write maker identify as IEN - 5648

CALL

Your steel requirements get prompt personal attention at Ryerson. Some kinds and sizes in short supply; so use Gov't. ratings when they apply. We'll do our best to help.

RYERSON

PRINCIPAL PRODUCTS:
Bars • Structurals • Plates • Sheets • Tubing
Allegheny Stainless • Alloy Steel
Inland 4-Way Safety Plate • Babbitt
Metal Working Machinery & Tools, etc.

FOR STEEL

JOSEPH T. RYERSON & SON, Inc.
Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh Buffalo, Chicago, Milwaukee, St. Louis, Seattle, Spokane, Los Angeles, San Francisco

If you write maker identify as IEN-5649

For Faster Drilling In Concrete & Masonry Use

SYNTRON

"Electromagnet"

HAMMER DRILLS

with Automatic Drill Bit Rotation

The New Syntron Hammer Drills take all the work out of drilling holes in concrete and masonry — no more tiresome turning of the drill chuck — just pull the trigger and a simple rubber ratchet mechanism automatically rotates the bit at the rate of 1600 blows per minute.

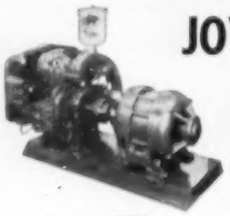
Speeds up hole drilling — reduces fatigue — allows more time for other jobs.

Write Today For FREE Catalog Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

If you write maker identify as IEN-5650

Here's Efficient, Dependable Air Supply



JOY WL-80

"UNITAIR" COMPRESSOR

★ A size for every standard motor rating
★ Force-feed lubrication
★ Small floor-space requirements
★ 81 to 640 CFM
★ Two Stage ... Air cooled

And here's FREE HELP!

Bulletin A-56 ... new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

Consult a Joy Engineer

W&D 13066

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO.

If you write maker identify as IEN-5651

CUT KEYWAYS THIS WAY

You can broach any standard width from 1/4" to 1" to any bore from 1/4" to 3" by hand IN ONE MINUTE for as little as a penny a keyway with a

Minute Man® KEYWAY BROACH KIT

CLIP THIS COUPON for specifications and prices on Kits, Broaches, Bushings and Production Type Guideless Broaches

The du MONT CORPORATION, Greenfield, Mass.

Mail me Descriptive Folder N

Name ..... Position .....

Company .....

Street .....

City ..... Zone ..... State .....

If you write maker identify as IEN-5652

PRINTING . . Belt fed machine exposes, develops, dries and delivers

Source: CHARLES BRUNING CO.
123-27 North St., Teterboro, N. J.

List is $1,600

Width capacity is to 46 in. in this new Model - 30 Copyflex machine, the same as for the Model 20, previously described IEN-10181-51. Printing speed has been increased from 95 to 144 ipm. by application of a 48-in. 2,000-watt Vycor mercury arc lamp. The machine operates on 220-volt 60-cycle ac.

Copies are made on Copyflex sensitized paper, cloth or film which the operator feeds in with the translucent original from a roll or a pile of cut sheets. The machine can be operated in usual office light without danger of exposing the paper. No fume-removal connection is required for the machine.

If you write maker identify as IEN-5653

PULLING . . Master tool set is assembled on new storage board

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.

For your selection

Pullermart No. SD6 is a new storage-board assembly of the company's standardized pulling tools divided into individual parts and sub-assemblies. Each is labeled for its intended purpose. The new arrangement makes it possible to assemble a tool for a given pulling job and then return the parts to the board ready for the next assembly. Three board sections carry parts for light, medium and heavy duty and for wheel pulling. The board is made of 5/8-in. plywood with an easie back to mount on the floor.

If you write maker identify as IEN-5654

BENDING . . Hand operated tool for 1/2 and 3/4 in. pipe and conduit

Source: TAL BENDER INC.
415-19 N. Water St., Milwaukee 2, Wis.

List is $67

Steel base mounts a bracket at one end of this new Handy-Bendy hand-operated tool. The bracket is equipped with a pin on which a bending form is secured. The pin also acts as the pivot point for the lever that carries the bending roll at its end. A pipe or conduit is inserted against an adjustable stop to come between the form and the roll while the lever is in vertical position. The lever can then be brought down a required distance to make a bend. It is returned to "up" position to remove the pipe or set it for the next bend. The assembly weighs 30 pounds.

If you write maker identify as IEN-5655

VALVE . . Air operated assembly employs a Paul venturi ball valve

Source: CONOFLOW CORP.
2102 Arch St., Philadelphia 3, Pa.

For process lines

New combination of the company's pneumatic operating equipment for valve control, previously described IEN-941-47, and a Paul ball-type valve, previously described IEN-5804-48, is available for throttling control in valve sizes to 8 inches. A positioning mechanism can be employed with standard pneumatic control instruments for automatic regulation or with manual loading stations for remote positioning. The valve provides straight-line relationship between lift and flow. It is available in a range of materials including iron, steel, stainless alloys and non-ferrous materials.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-5656

HOW TO GET MORE WORK

from ALL HANDS

SIMONDS LINEMASTER

FOOT TREADLE SWITCH

7" long, 4" wide, 3 1/4" deep—Weighs only 9 1/4 lbs.

LINEMASTER puts feet to work when hands are busy! Compact switch operates with light pressure from foot—or knee, if mounted on bench or side of wall. Increases production by allowing full use of both hands. Prevents accidents to fingers. Sturdy cast iron housing, black crackle enamel finish. Simonds LINEMASTER offers low first cost, and years of trouble-free operation.

WRITE FOR BULLETIN AND PRICES | Let us quote on your special switch requirements

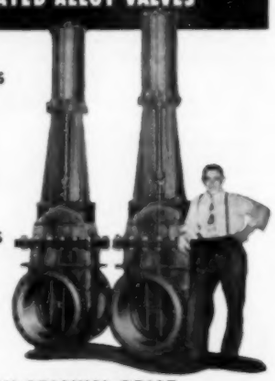
SIMONDS MACHINE CO., INC. 59 SAXON ROAD SOUTHBRIDGE, MASS.

If you write maker identify as IEN-5657

The Only...

FABRI-VALVE

FABRICATED ALLOY VALVES



LOOK FOR THIS TRADE MARK

FABRI-VALVE

ACCEPT NO SUBSTITUTES

Save ON ORIGINAL PRICE, INSTALLATION and SHIPPING COSTS

FABRI-VALVES are complete weldments from rolled plate, thus eliminating any porous areas and insuring proper thickness where desired.

FABRI-VALVES weigh considerably less than a cast valve, making a large saving not only in original price but in installation costs and shipping weights.

FABRI-VALVES are a modern development built for use in conjunction with modern light-weight pipe and fittings.

Write inquiries to dealer listed below or to home office for descriptive literature.

SIZES IN STOCK 2" to 24"
SPECIAL ORDERS IN 30 DAYS

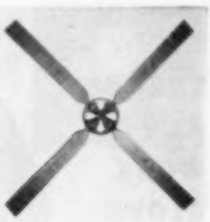
AGENTS:

SOUTHERN CORPORATION Charleston, S. C.
M. J. GIGY & ASSOCIATES San Francisco, Cal.
JOHN B. ACTELL & CO. New York, N. Y.
NORTHWEST COPPER WORKS, Inc. Portland, Ore.
THOS. W. MacKAY & SON, Ltd. Vancouver, B. C.
CHANDLER BOYD CO. Pittsburgh 19, Penn.

FABRI-VALVE CO. OF AMERICA
2100 N. Albina Ave., Portland 12, Oregon

If you write maker identify as IEN-5659

Need Cooling Fans?



write NOW for detailed information on

Aeromaster

Industrial Cooling Fans

- Faster Cooling
- Longer Life
- Greater Economy
- Faster Service

Koppers Aeromaster Fans give you faster cooling and longer life . . . they're an adaptation of high-speed top-efficiency aircraft propellers. And Aeromaster's high efficiency *cuts power costs up to 10%* . . . helps fan pay for itself. Aeromaster Fans are available for every industrial cooling requirement. Standard models up to 750,000 c.f.m. Engineering service for special installations. Sales Engineers available in all principal cities. Write today for details to: KOPPERS COMPANY, INC., *Aeromaster Fans*, 275 Scott St., Baltimore 3, Maryland.

KOPPERS

If you write maker identify as IEN-5660

How to Reduce

DOWNTIME
DOWNTIME
DOWNTIME
DOWNTIME

with STEAM TRAPS

★ Super-Silvertops* reduce downtime since three pipe connections in the head permit these traps to be installed straight-in-line or as an elbow . . . saving 50 minutes whenever a trap is installed . . . 30 minutes whenever serviced.

★ Super-Silvertop valves and seats are made of longer lasting Anderloy* alloy which eliminates continual replacement. The patented guided bucket minimizes bucket damage.

Write for a copy of Anderson's famous 36-page book "Solving Steam Trap Problems."

THE V. D. ANDERSON COMPANY
1937 West 96th Street • Cleveland 2, Ohio
*Trade Marks Reg. U. S. Pat. Off.

SUPER-SILVERTOPS

If you write maker identify as IEN-5661

LONGER LIFE IN EVERY LINK
. . . A Chain for Every Drive!

ATLAS OFFERS YOU A FULL LINE OF PRECISION-BUILT "SUPER LIFE" ROLLER CHAIN FOR EVERY SERVICE

Singles or multiples . . . regular or heavy duty . . . standard or extended pitch . . . steel, stainless steel or bronze, you'll find the rugged chain you need in the complete Atlas line.

Precision-made from specially selected steels, Atlas gives you longer life in every link. Pins and bushings are *case-hardened*, each link plate and roller *toughened*—by an exclusive Atlas heat-treating process. Built-in stamina provides extra strength to take the heaviest loads—whether uniform, uneven or severe shock.

Whatever your requirements, you can depend on Atlas for longer wear over the long pull. An Atlas engineer will gladly recommend the right roller chain for years of efficient, trouble-free service.

ATLAS CHAIN AND MANUFACTURING CO.
Philadelphia 36, Pennsylvania

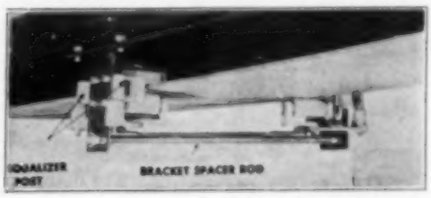
Send For New Roller Chain Fact Book No. ARC-12 E.N.

ATLAS ROLLER CHAIN

If you write maker identify as IEN-5662

CONVEYING . . Centering guide keeps conveyor belt operating in line

Source: RAPIDS-STANDARD CO.
342 Rapistan Bldg., Dept. BT, Grand Rapids 2, Mich.



Guide rollers are pivoted

Belt-Trainer is a new attachment for application on any make of belt conveyor in which the return run of the belt permits. The unit applies on fabric or rubber-covered belts measuring $\frac{1}{16}$ in. or more in thickness with operation at speed to 200 ft. per minute. Flat sides of the belt run between two sets of knurled spring-loaded rollers. The belt edges contact two sets of equalizer posts. If the belt creeps to either side it presses against the posts on that side and moves the spring-loaded knurled rollers out of square alignment. This forces the belt back into place while the rolls return to position.

If you write maker identify as IEN-5663

TESTING . . Electronic instrument, for flux density, magnitude, direction

Source: DYNA-LABS INC.
132 Lafayette St., Dept. IE, New York 13, N. Y.

List price is $374

Gaussmeter D-79 is a new flux-measuring instrument with which direct and continuous meter readings can be made by inserting one or another probe into a flux field. Probe dimensions are 0.025 by 0.2 in. so most gaps can be entered. The active area is 0.07 in. in diameter located near the probe tip. Densities from 10 to 30,000 gauss can be measured in both ac. and dc. fields. Since the probe itself is nonmagnetic the field is not distorted.

Operation is based on the "Hall effect" principle in which the probe is balanced by means of front panel controls after it has been inserted in a magnetic field and the bridge circuit has been driven off balance in proportion to the strength of the field. Four linear ranges are maximum at 0.1 to 3 kilogauss full scale with one probe and from 1 to 30 kilogauss full scale with the second. In addition to measuring flux density and direction of flow the instrument will locate and measure stray fields and can be employed to plot variations in strength and to check production lots against standard.

If you write maker identify as IEN-5664

PROTECTING . . Respirator hood covers worker's head and shoulders

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

Snap fasteners are employed in this new design of the company's respirator hood to hold the plastic window in position and to permit releasing it should it become damaged. The hood is available with cartridge or disc-filter respirator. Draw strings tie under the worker's arms to provide a snug fit. Leather reinforces the assembly. An elastic strap sewn to the back of the hood suits it for any head size.

If you write maker identify as IEN-5665

PRESS . . Open back inclinable, rates 60 ton, 4 in. standard stroke

Source: SALES SERVICE MACHINE TOOL CO.
2361-65 University Ave., St. Paul 4, Minn.

Ask for specifications

Rated speed is 45 strokes per min. in a geared assembly and 95 strokes per min. in the flywheel design illustrated for this new Model-60 press. The new machine employs the Airflex pneumatic clutch and brake, previously described IEN-10789-51.

Bolster area is 21 by 32 inches. Throat depth is 11 inches. Distance from bed to slide in standard assembly is 14 inches. Width of the opening in the bed is 13 by 16¼ inches. Slide area is 10 by 14 inches. Drive is by a 5-hp. motor. Tie rods reinforce the frame at the gap.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5668

HOW TO IMPROVE YOUR PRODUCTS AT LOW COST

If you write maker identify as IEN-5667

The American Brass Company, Waterbury, Conn., reports

Plant layout speeded with Kodagraph Autopositive Paper

● The engineering and reproduction departments of The American Brass Company must keep pace with the constant plant-layout demands of ten manufacturing divisions. *And here's how Autopositive Paper saves time and dollars in this work.*

First, paper cutouts of machines and equipment are pasted in position on a whiteprint of the proposed layout. From this opaque pasteup, a positive reproduction on Autopositive Paper is made *directly*. There's no negative step, no darkroom handling with this revolutionary photographic intermediate material. Just expose in a standard whiteprint machine . . . processing in standard photographic solutions.

Then, the Autopositive intermediate—with dense photographic black lines on a durable, evenly translucent base—is used to produce the desired number of prints. These are sent to the branch involved to be studied and returned with comments.

This procedure may be repeated half a dozen times until complete agreement is reached on the final layout. And *every time* revolutionary Autopositive Paper saves time and dollars!

Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in engineering drawing reproduction

Learn all the ways Kodagraph Autopositive Paper is simplifying routines in thousands of concerns. Write today for a free copy of "New Short Cuts and Savings" for interesting facts about companies you know . . . and a revolutionary new product *you should know.*

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN-5669

COSTLY TO YOU..

Harder and Slower Work for Truckers

SABIN One-Man BARREL TRUCK

REDUCES HANDLING TIME AND COST.

Run the truck up to container, hook on, at top then pull back on handle to pick up weights as much as 500 pounds. Operation is automatic.

TYPE "L 3" Sabin Truck has Exclusive Third Wheel Feature for better balance and added safety in moving loads.

THE SABIN MACHINE CO.
6540 Carnegie Avenue
Cleveland 3, Ohio

WRITE FOR BULLETIN NO. 49-A

ALSO TOTE PAN, BOX, CARBOY, KEG TRUCKS!

If you write maker identify as IEN-5670

Porter-Cable
ABRASIVE BELT GRINDERS
Slash Costs, Speed Output, Improve Quality
on many MILLING and GRINDING operations

Machining flats
Grinding contours
Centerless grinding
Generating radii
Chamfering, Beveling
Burring, Polishing

EARLY DELIVERY

Abrasive belt machining is a method of removing stock, surfacing and grinding—5 to 25 times faster than previous methods in most operations.

Uniform surfaces having an overall flatness within .0005" are possible. Polishing-out time is reduced 30% to 50%.

Work-holding fixtures are often unnecessary. When required, they are relatively simple and inexpensive. 55% to 75% set-up and lock-up time is saved . . . often eliminated.

Compact and rugged Model 506 Wet-Dry Belt Grinder. Grinds and polishes medium-sized work. 6" belt on a 12½" platen.

For Example: Production increased 170% on this piece!

Ammunition box rim originally milled at rate of 33/hr. Now ground flat and watertight on Porter-Cable Abrasive Belt Grinder at 89 per hr.

Complete Line:
- Platen Grinders
- Contour Grinders
- Bench Grinders
- Free-Belt Grinders
- Contact Grinders
- Centerless Grinders

Free! "Case Histories"—a 32-page fact-packed booklet with 46 examples—over 100 pictures—showing how abrasive belt grinding ups output and slices cost on wide variety of operations. Mail coupon today for your free copy.

PORTER-CABLE Machine Co.
6105 N. Salina St., Syracuse 8, N. Y.
Please send me free copy of "Case Histories."
Name
Title
Firm
Address
City State
In Canada write: Strongridge, Ltd., London, Ont.

If you write maker identify as IEN-5672

CLEANING . . Wet vacuum machine removes scrub water from a floor

Source: AMERICAN FLOOR SURFACING MACHINE CO.
516-20 S. St. Clair St., Toledo 3, Ohio

For large floor areas

Clean dry path 29 in. in width results when this new water pick-up machine is moved across a floor that has been left wet from a preceding scrub operation. A squeegee-equipped head at the front of the machine gathers and picks up the water for delivery into the machine's porcelain-lined 15-gal. tank. Suction action is provide by a blower driven by a 1-hp. universal motor for operation on 110-volt input.

Construction includes a copper float that stops the action when accumulating water reaches a predetermined level in the tank. Included also are rubber-tired ball and roller-bearing wheels and caster, rubber bumper wheels on the corners of the pick-up head, a retracting lever for the head, a trimmer hose connection for wet or dry cleaning, a 50-ft. extension cord and plug for electric connection.

If you write maker identify as IEN-5673

CALCULATING . . Portable instrument sets up, solves mathematical problems

Source: CURTA CALCULATOR CO.
5543 S. Ashland Ave., Chicago 36, Ill.

Made in Switzerland

Problems in addition, subtraction, multiplication, division, square and cube roots, factors, percentages are set up on the barrel and at the two ends of this new calculator. It totals to 99 billion and carries the calculation out to five decimal places. Figures can be checked and rechecked on three sets of dials. Weight is 8 ounces. The unit is supplied in a rubber-lined metal case. List price is $120.

If you write maker identify as IEN-5674

FASTENINGS . . Spherical washers, latch bolts, keys for jigs, fixtures

Source: NORTHWESTERN TOOL & ENGINEERING CO.
124 Hollier Ave., Dayton 3, Ohio

Better to buy than make

Three sizes of latch bolt, ⅜-in. 16, ½-in. 13, and ⅝-in. 11 have been added to the company's line of standardized components for use in jigs and fixtures. Also new in the company's stock lines are spherical washers in four sizes from ¾ to ¾ in. and fixture keys from ⅛ to 1½ in. in six steps. These new parts and previously developed items making up the line are illustrated and described in a new 4-page Catalog 20.

If you write maker identify as IEN-5675

TESTING . . Portable instrument detects, measures and signals static

Source: JOHN HEWSON CO.
106 Water St., Dept. IE, New York 5, N. Y.

To prevent trouble

Staticator trade names a new portable instrument assembled in a cast-aluminum housing measuring 6½ by 6½ by 6 inches. It indicates and signals the presence of a static charge. It is employed in connection with a sensitive detector-probe cable connected to the instrument housings. The instrument signals by a light, by a buzzer and into a set of earphones that are standard equipment for use in noisy industrial areas. An antenna can be connected to the unit for permanent warning installation. A central control panel can be set up at a distant point and connected by cable to the instrument. Separate lights can be employed on this panel when it is wired to more than one location in a plant.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 98

If you write maker identify as IEN-5676

TOUGH NEW WORK GLOVE with a TOUGH NEW COATING

SILVERTEX

These toughies will save you money, keep all hands cooler. Silvery coating reflects moderate heat radiation, resists cuts, snags, abrasion, and chemicals, won't crack or peel. Curved finger design, swing thumb, all standard styles.
Write for name of your distributor.

THE SURETY RUBBER CO. 100 Hall Avenue Carrollton, Ohio, Dept. 1

IN CANADA: Safety Supply Company, Toronto, Ontario

If you write maker identify as IEN-5677

DO YOU NEED PRECISION ROLLED OR ULTRA-THIN METAL STRIP?

WE ROLL • Beryllium-Copper-Invar • Phosphor Bronze • Copper • Brass • Nickel-Silver • Stainless Steels • Low Carbon Steels • Nickel • Monel • Haynes Stellite Alloys • Magnetic Alloys • Chrome Iron Alloys • and Many Others

WE REGULARLY PRODUCE metal strip up to 8" in width and down to .0005" thin—to tolerances as close as ±.0001".

OUR MODERN EQUIPMENT INCLUDES Sendzimir, 2-High, and 4-High precision rolling mills, precision gang slitters, and continuous atmosphere annealers.

WE CARRY A WORKING INVENTORY of some metals for prompt service. Send us your order for one pound or a thousand—or write for catalog of products and services.

AMERICAN SILVER CO., Inc.
INDUSTRIAL DIVISION
36-03 PRINCE ST. • FLUSHING 54, N. Y.

If you write maker identify as IEN-5678

SPEED UP SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.

ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make cloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW
EA. $19.50 F.O.B. CHICAGO
Spot Shipment
Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE FRANKLIN PARK, ILLINOIS

If you write maker identify as IEN - 5679

Yes, the Window's Easily Replaceable on the AO R75 HOOD!

PROTECTIVE CLOTHING

Here's *combined and complete* protection for head, eyes, neck, shoulders and respiratory passages in dust and paint spraying operations. The very broad (10") window of clear cellulose acetate provides unobstructed frontal vision and can be replaced in a jiffy. Your choice of white nylon, olive green twill or white muslin. Your nearest AO Safety Products Representative can supply you.

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as IEN - 5680

Well Stacked!

Write for our catalog of materials handling equipment.

Palletized goods is well stacked when it's stacked on strong, flexible, space conserving E. M. I. prefabricated pallet racks. They save handling time by permitting removal of low level material without disturbing that above.

EQUIPMENT MFG. INC.
21564 Hoover Road
Detroit 5, Michigan

If you write maker identify as IEN - 5682

WRENCH . . Torque indicating, pneumatic drive, to 25 inch pounds

Source: GARVIN BROTHERS INC.
430-34 Fellows St., Dept. I, South Bend 4, Ind.

Accurate to 2 per cent

Small bolts and screws are protected against thread stripping and at the same time can be set up tightly by application of this new Model MA-25 air-driven torque wrench. It is available also with special gearing for a maximum range of 40 inch pounds. Weight is 6 lb. not including a remote control housing where air pressure regulation for the drive is located.

Operating speed is 600 to 800 rpm. for the standard unit with 25 in. lb. rating. It is 200 rpm. when the 40 in. lb. gearing has been added. Torque is set at the wrench indicator which is a part of the tool assembly. When this setting is reached rotation stops. The spindle takes various types of driving head for given work.

If you write maker identify as IEN - 5683

THERMOMETER . . Wood mounted for immersion in liquid handling tanks

Source: H-B INSTRUMENT CO.
2631-35 Trenton Ave., Philadelphia 25, Pa.

Responds quickly to temperature change

Stainless scale and mercury-glass tube are assembled in an unfinished hardwood handle measuring 18 in. in overall length in this new thermometer. Tube and scale are anchored together in compensating arrangement for temperature change. The scale carries etched graduations filled with a black pigment that is resistant to abrasion and corrosion.

If you write maker identify as IEN - 5684

MARKING . . Hand numbering stamp, six or seven wheels, for smooth surface

Source: WM. A. FORCE & CO.
64 White St., 4th Floor, New York 13, N. Y.

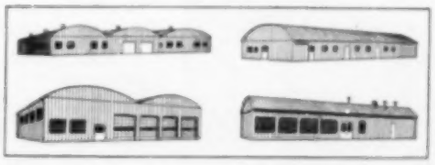
Can be locked open

Rubber figures $\frac{1}{4}$ in. in height are mounted on the type wheel in this new stamp. Rubber is employed on the head also to prevent slipping when the stamp is employed on glass, photographic film, cellophane or metals such as chromium, nickel, tin. The stamp will make clear sharp markings when the correct ink is employed and the figures are cleaned at frequent intervals. The wheels advance one count on each statuping movement. They return to contact the ink pad when the depressed handle is released at completion of a mark.

If you write maker identify as IEN - 5685

BUILDINGS . . Prefabricated steel, to 60 ft. span, 12 to 20 ft. height

Source: BROOKVILLE MFG. CO.
P. O. Box 67-A, Brookville, Pa.



Ask for illustrated specifications

Fully Insulated Structure designates a new prefabricated steel building made up of standardized trusses, columns, roof, side walls, insulation and windows, doors and accessory members to comprise a complete unit. Single spans, 40, 48 and 60 ft., are designed so they can be assembled in multiples. Standard sides are 12, 16 and 20 ft. in height. Standard length is any multiple of 16 feet. Windows are furnished in any 8-ft. section. Hinged single doors are standard in an 8-ft. section and double hinged or overhead doors are supplied in any 16-ft. section of the new building.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5686

THE RIGHT TOOL WHEN YOU WANT IT

This Continental Counterbore Set No. 1 contains a wide assortment of counterbores, countersinks and pilots arranged for quick selection. Its two holders feature Continental's Balanced Indestructible Drive, in which the tools are engaged or disengaged by a simple "twist of the wrist." One of Continental's three standard counterbore sets is sure to suit your needs. Order through your local Ex-Cell-O representative or write to Continental for complete information. Ask for Bulletin B47-37.

52-10

CTW

Continental Standard Counterbore Set No. 1 for counterboring, spot-facing and countersinking.

CONTINENTAL TOOL WORKS
DIVISION OF EX-CELL-O CORPORATION • DETROIT 32, MICH.

If you write maker identify as IEN - 5687

BACKED UP by GEARS FROM STOCK

Even when you specify such phenomenally long life gear sets as Cone-Drive double enveloping gearing, it helps to know that if you ever need replacements you can get them *—from stock!*

Make sure of that by specifying *STANDARD* Cone-Drive gear sets and reducers.

They will also give you these "plus" advantages:

- **Smaller center distances**
- **Up to 2/3 less weight**
- **More teeth in contact**
- **Lower overall cost**

STANDARD Cone-Drive gear sets come in ratios from 5/1 to 70/1, will handle loads from fractional to over 300 hp. Write for specifications.

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Davison Michigan Tool Company
2171 E. Grand River Avenue • Detroit 11, Michigan

If you write maker identify as IEN - 5688

Look!

THE NEW BAKER TYPE FS gives you the most material handling you can get for your money in a 2000 POUND FORK TRUCK

Here's Why:

▶ IT'S BUILT to take PUNISHMENT!

All-Steel welded frame; powerful Baker motors; efficient worm-drive poweraxle; dynamic-braking, 2-drum, 5-speed, NO Plug controller—all components are of the same basic construction as in our heavy-duty equipment for capacities up to 10,000 pounds.

▶ It's the most MANEUVERABLE Truck in its class!

An FS with 36-inch forks can make a "U" turn in an 8½-foot aisle! It can stack a 48-inch load at right angles to a 10-foot aisle without sacrificing stability.

▶ IT'S ECONOMICAL!

100% functional design means that every dollar you invest goes to work for you. You save on operating and on maintenance costs. *The FS is always on the job!* By any standard you apply, the FS is the best buy in its class.

All the features engineered into the outstanding Baker Type FS, 2000-pound Fork Truck are described in an illustrated 8-page specification bulletin. • Write for your copy.

THE BAKER-RAULANG CO.
2236 WEST 80th STREET, CLEVELAND 2, OHIO

Baker INDUSTRIAL TRUCKS

If you write maker identify as IEN-5689

New

FOR DESIGNERS and FABRICATORS of HEAT TRANSFER EQUIPMENT

Handy condensed technical data on tubing properties, applications, and fabrication to help you meet today's production challenges.

write for...

• Write for TECHNICAL BULLETIN TB-142.

TA-1672G

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
General Offices: Beaver Falls, Penna.
Plants: Beaver Falls, Penna. and Alliance, Ohio

If you write maker identify as IEN-5690

SWITCH NOW to Alnor

MOTOR-DRIVEN SWITCH

Wherever you now have a manually operated switch on your instrument board for closing a series of circuits one at a time, an Alnor Motor-Driven Switch provides a simple means of converting to automatic, continuous operation.

For example, if you have a pyrometer installation reading as many as 20 different temperature points, the Alnor Moto-Switch can be added to your present pyrometer to give continuous readings—on each station once every minute. Dial face can be easily read from 20 feet.

Available in 6, 11, 12 and 20 circuit models. Write today for Bulletin 4703 that gives complete details. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN-5691

step up production with

STOW flexible shaft MACHINES

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY for your free copy of CATALOG S1

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN-5692

HEATING . . Dielectric equipment to preheat plastic molding compounds

Source: W. T. LA ROSE & ASSOCIATES INC.
635 Second Ave., Troy, N. Y.

List is $6,500

Twelve pounds of plastic or rubber molding material can be heated to about 250 deg. F. in one minute in this new Model-1000 electronic heater. A larger load to about 15 or 20 lb. can be accommodated by the 16 by 18-in. heating electrode if a longer preheating time than a minute can be taken. Maximum opening is 6 inches. Minimum is 1½ inches.

Output rating is 15 kw. at 65 megacycles with input on 220 or 440-volt ac. Overall dimensions are 36 by 34 by 57 inches. Weight is 1,000 pounds. The machine has been tested for radiation and shows a strength of only 0.2 microvolt per meter at one mile which is within the requirements of FCC Regulations. Mounting is on wheels for use in a press line.

If you write maker identify as IEN-5693

RECTIFYING . . Sealed assembly in metal case with standard tube mounting

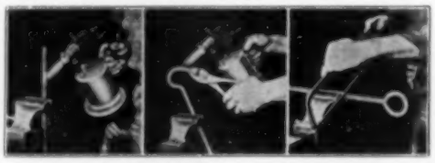
Source: INTERNATIONAL RECTIFIER CORP.
1519-23 E. Grand Ave., El Segundo, Calif.

No. W15CM, shown in the illustration, is representative of the company's new line of hermetically-sealed selenium rectifiers with standard tube terminals to fit standard sockets. Interior voids are filled with inert gas just prior to sealing. The unit is proof against attack by corrosive atmosphere, moisture, salt spray, fungus. The unit shown is rated at 350-volt rms. input, 550-volt peak inverse, 120 ma., and 160-volt dc. output at 35-deg. C. ambient.

If you write maker identify as IEN-5694

FASTENING . . Threaded rod to heat, bend and cut to required shape

Source: REDI-BOLT
P. O. Box 6102-A, Chicago, Ill.



You shape it to your needs

Steel rod measuring 36 in. in length is threaded its full length and supplied for the user to heat, bend, cut in production of long bolts, rods, eye-bolts, U-bolts, clamps, as required in repair and construction operations. Six diameters range from ¼ to ⅝ inch. A coating protects against corrosion.

If you write maker identify as IEN-5695

DRAFTING . . Parallel arm machine for use on boards to 24 by 36 inches

Source: V & E MFG. CO.
P. O. Box 950-MA, Pasadena 20, Calif.

$54.50 without scales

Model 33 is a new 16-in. drafting machine to take 6 and 12-in. scales. It is a miniature reproduction of the company's larger machine with 24, 30 and 36-in. arms. The scales mount removably in resilient sockets. The drafting head is supported by a centrally-positioned plastic skid button that will not mar the drawing paper on which it rests.

The assembly includes a vernier reading to 10 minutes, aluminum brackets and steel band covers, a full-circle baseline setting and protractor brake. Angles including the 15-deg. positions are set by the protractor brake in the same manner as the angles between the 15-deg. positions of the standard drafting machine so no indexing mechanism is required. Scales list at $2.80 and $4.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN-5696

FREE!

HOW TO SAVE OLD ROOFS!

HOW

90% of Leaky Roofs can be Saved!
to cut Labor Costs in Half!
"Dead" Roofs get Extra Years of Life!

This simple system of roof maintenance and repair can save you today's high costs of re-roofing and major repair by outside contractors. Shows how every type of industrial and commercial roof can be maintained at low cost and give many years of extra service. This FREE manual, by word and picture, gives simple step by step methods of inspection and repair . . . tells what to look for and where to look to stop major roof defects *before they start* . . . how to do your own repairs quickly, effectively, economically. Packed with money-saving practical information. A request on your business letterhead brings your FREE copy at once—write today!

THE TROPICAL PAINT & OIL CO. SINCE 1883
1126-1280 W. 70th Street • Cleveland 2, Ohio

If you write maker identify as IEN-5697

The New CLEARVIEW
NAMEPLATE PRESS

EASY TO OPERATE • COMPACT • DURABLE

Here at last is a new low-priced Nameplate Press that will pay for itself quickly and many times over.

Now you can stamp neat, perfectly aligned letters and figures on all types of identification plates with this new, easy-to-operate Nameplate Press:

MACHINERY DETAIL PLATES
KEYS — TAGS — CHECKS
DIRECTORY PANELS
and scores of other identification purposes.

PREVENTS IRREGULAR ALIGNMENT, SPACING, DEPTH

- Stamps Neat Uniform Character
- Fully Automatic Letter Spacing
- High Quality Hardened Steel Dial
- Adjustable Depth Control
- Accommodates Plates up to 4" x 8"
- Nickel Plated Throughout
- Uses No Electricity

FULLY GUARANTEED

Write, call or wire today for complete information and price.

The CLEARVIEW Company
177 Stanton St., New York 2, N. Y. GR. 3-3830

If you write maker identify as IEN-5698

Its all in the Heat Treatment

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting —The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

We are also manufacturers of—
- Special branding and knurling wheels .
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

WRITE TODAY for ADDITIONAL INFORMATION

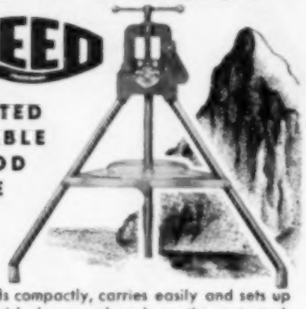
PITTSBURGH STENCIL and TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

If you write maker identify as IEN - 5699

Solid as a Rock!

the REED

PATENTED PORTABLE TRIPOD VISE



One unit. Folds compactly, carries easily and sets up instantly. A quick downward push on the patented, large-surface tray locks the stand solidly so that all cutting or threading effort goes into the work. Legs cannot buckle under any working conditions. They line up vertically with the face of the well-known REED long-jaw vise. Ask your jobber or write . . .

REED TRADEMARK

MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

If you write maker identify as IEN - 5700

NEW!

THE COPYFLEX "30"

High Speed–Low Price–Premium Prints

Here, for the first time, is a copying machine – Bruning's Model "30" COPYFLEX – that combines such a *high speed* with such a *low price* and such *premium quality*, ready-to-use prints.

The "30" is ideal for the drafting room or office with medium volume requirements and a moderate budget. It handles cut sheets or roll stock up to 42 inches wide, and offers features ordinarily found only in larger, more expensive machines.

With the "30" and the unsurpassed line of sensitized COPYFLEX papers, cloths and films, you can always get exactly the kind of premium quality prints you want, when you want them.

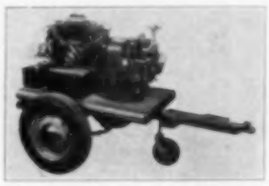
See how COPYFLEX "30" can save your time, cut your costs. Write for Booklet A-2030 to CHARLES BRUNING CO., INC., Dept. B52, Teterboro, N. J.

BRUNING
Specialists in copying since 1897

If you write maker identify as IEN - 5702

COMPRESSOR . . Portable air cooled, engine drive, 21, 35, 50 cfm. ratings

Source: DE VILBISS CO.
305 Phillips Ave., Toledo 1, Ohio



Utility assembly

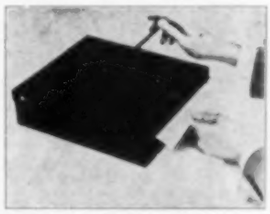
The trailer bed on which this new engine-driven compressor is mounted acts also as the receiver. The bed rides on springs on a pair of pneumatic tires. Pressure capacity in the receiver is tested to 300 pounds. A towing tongue and stabilizing caster are included.

The compressor is V-type, four-cylinder, two-stage design with finned intercooler and aftercooler. The crankshaft is mounted in ball bearings and is fitted with insert-type rod bearings. Oil is distributed to the bearing points automatically. Governors on the two larger units slow the engine down when the compressor unloads. Electric or magnetic engine starting can be specified. An enclosure is available for protection in outdoor operation and against tampering.

If you write maker identify as IEN - 5703

DISPENSING . . Light tight container to protect, dispense sensitized paper

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.



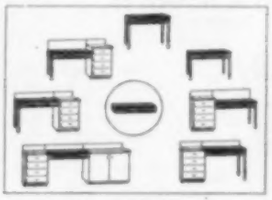
Lift lid to load

The lever handle on the side of this new Portagraph sensitized-paper dispenser is operated to eject single sheets from the light-tight interior through a cloth-protected slot. Sheets remaining inside the housing are protected against exposure to light. Two sizes take paper sheets measuring 8½ by 11 in. and 8½ by 14 inches. Weights are 4⅝ and 5¼ pounds. Typical operation is illustrated.

If you write maker identify as IEN - 5704

FURNITURE . . Table unit assembles two drawers under steel top

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.



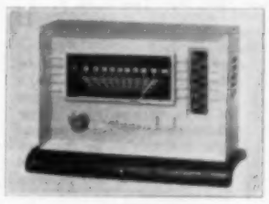
Many combinations

Versa-Table is a new wood assembly containing two drawers and a steel top with overall dimensions at 30 by 48 inches. The unit applies alone on a set of legs for either 30 or 36 in. of height or at the side or between sectional units in the company's line of laboratory furniture. It can be topped with stainless steel, Kemrock, Formica bonded to plywood sections. Reagent shelves can be added. A stainless-steel top with an integral splash back and reagent shelf is also available.

If you write maker identify as IEN - 5705

HYGROMETER . . Dial type assembly with thermometer for humidity readings

Source: ABBEON SUPPLY CO.
179-17 Jamaica Ave., Jamaica 32, N. Y.



List is $18

Model 186 is a new instrument in the Hygrodial line, previously described IEN-4453-50. It indicates relative humidity and temperature in the air to which it is exposed. It mounts a humidity scale reading in equal divisions between 0 and 100 per cent relative humidity and a thermometer scale measuring 1½ in. in height and covering a range between 0 and 100 deg. F.

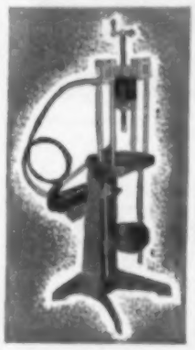
The humidity element is made of nine strands of 3 hairs per strand or a total of 216 in. of fine blond human hair. Dimensions are 6 by 2½ by 4 inches. Mounting is on a base to stand on a desk or table. It can be mounted on a wall.

If you write maker identify as IEN - 5706

OTC 17½ TON HYDRAULIC OPEN THROAT PORTABLE PEDESTAL PRESS

ONLY $199.95

SAVES HOURS AND DOLLARS ON EVERY JOB



An unbelievable low price for this amazingly efficient Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller . . . a must for every maintenance shop. Pays for itself on the first few jobs in time, tools and money saved.

Use it for pressing bearings, bushings, pins, for bending, straightening, compressing, spreading, etc. Move it where you want it—it's portable.

STRONG . . . will handle 95% of all pulling or installing jobs.

COMPACT . . . Base is only 20" x 21" — 34¼" from top of press plate to floor. Press Plate thrust is 7½" deep, 6" wide, 10½" clearance between uprights, 11" from Ram to press plate with almost unlimited vertical adjustment. Weighs less than 200 lbs.

VERSATILE . . . POWER-TWIN Hydraulic Unit may easily and quickly be detached for field service or other pulling jobs.

INEXPENSIVE . . . dollar for dollar . . . ton for ton . . . the lowest priced, most rugged and efficient Hydraulic Press on the market.

See your jobber for complete information or write us.

OWATONNA TOOL CO.
371 CEDAR STREET • OWATONNA, MINNESOTA

If you write maker identify as IEN - 5707

New WILLSON

Only Half the Weight of Glass Lenses

• 6-Curve—50 mm. Round
• 6-Curve—P3 Drop Oval—44 and 47 mm.

Add extra comfort to your safety goggles and spectacles with these lightweight, extra tough plastic lenses. Improved surface hardness gives unusual resistance against pitting, scratches, abrasion and many industrial acids that would mar ordinary plastics. Plas-Tough® lenses meet Federal Specifications for impact resistance and light transmission. Replace with Plas-Tough®!

Write for Descriptive Folder

WILLSON PRODUCTS, INC.
217 Washington Street • Reading, Pa.

If you write maker identify as IEN - 5708

Announcing . . . Amsco AW 79 for AUTOMATIC HARDFACING

AMSCO AW 79 will meet your every requirement for better control of wear where abrasion and high impact are important factors—plus giving you all the advantages of automatic welding. It can be used for reclaiming parts worn to uselessness or for increasing productivity of new parts.

The result of extensive research and field testing, AMSCO AW 79 is especially suitable for rebuilding and hardfacing tractor rollers and idlers. Back-up rolls, steel wheels, sheeting rolls, dredge pins, as well as dozens of other applications, can be successfully hardfaced with AW 79. It can be used on any conventional automatic submerged arc welding equipment now being used.

AW 79, the first in a series of rods by AMSCO for automatic hardfacing, is an alloy steel electrode fabricated by encasing particles of alloy metals in a continuous steel tube. Deposits are of martensitic alloy steel with chromium and molybdenum as the principal alloying agents. It is available in coils weighing approximately 100 lbs., each with an inside coil diameter of 22½", and is stocked in wire diameters of 5/32" and 3/16". Packed in cardboard containers with an anti-rust agent, other coil diameters and sizes are available on request. Write today for complete information.

AMERICAN Brake Shoe COMPANY — AMERICAN MANGANESE STEEL DIVISION
401 EAST 106th STREET • CHICAGO HEIGHTS, ILL.

Other Plants: New Castle, Del., Denver, Oakland, Calif., Los Angeles, St. Louis. In Canada: Industrial Steel Division, Oakville, Ont. Amsco Welding Products distributed in Canada by Canadian Liquid Air Co., Ltd.

If you write maker identify as IEN-5709

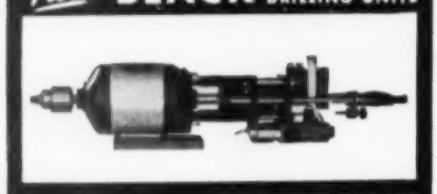
Join plain-end pipe *permanently*. The quick, easy economical way is with a Dresser Style 38, using only a wrench. No exact pipe alignment necessary. Permanent, "flexible-tightness" prevents leaks from normal contraction, expansion stresses.

Available for sizes ¾" ID through 72" OD steel pipe and cast iron pipe.

DRESSER
COUPLINGS
Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rockwell St., Houston, Texas; 101 S. Barshore Highway, South San Francisco, California.

If you write maker identify as IEN-5710

New BLACK SELF-CONTAINED DRILLING UNITS



NO SPLINES — Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

NO GEARS — New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled so tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

NO CAMS

NO CLUTCHES

NO REVOLVING WEIGHTS — Operate in any position. Wide range of speeds and sizes.

Write for complete information

BLACK DRILL COMPANY, INC.
1378 EAST 222nd STREET CLEVELAND 17, OHIO

If you write maker identify as IEN-5711

Never Before!

. . . SO MUCH POWER PER POUND

MEET the new Rotor Vertical Air Grinders! Never before have you had so much power in vertical air grinders . . . for such light weight! They're well balanced . . . easy on the operator. Here are *new* features to speed up your metal removal. *Write today for Bulletin No. 40.*

AIR O'TOOL

THE ROTOR TOOL CO.
CLEVELAND, OHIO

If you write maker identify as IEN-5712

CONSTRUCTION . . Power shovel, crawler mounted, convertible to crane

Source: AMERICAN HOIST & DERRICK CO.
61 S. Robert St., St. Paul 1, Minn.

Push button opens dipper

Rating is ⅝ yd. for the company's new crawler-mounted shovel. It is known as Model 375-BC and can be converted for service as a crane, a dragline or a pull shovel. Controls operate through ball-joint rod-end bearings for the hoist, swing and travel movements. Anti-friction bearings are employed in the brake linkage to minimize operator effort.

The machinery platform is an integral welded-steel unit. Track pads are steel castings. Alloy steel is employed in the boom. A high-speed boom hoist with controlled lowering arrangement is standard equipment. Boom radius can be changed without danger of dropping the boom. It lowers against engine compression at any speed desired by the operator. Maximum lowering speed is the same as maximum raising speed for the new unit.

If you write maker identify as IEN-5713

FASTENING . . Locknut floats in metal anchoring bracket

Source: KAYNAR MFG. CO.
818 E. 16th St., Los Angeles 21, Calif.

Lubricated threads

New assembly of the company's Kaylock locknut, previously described IEN-12887-51, includes a pressed-metal anchoring bracket in which the nut has a $\frac{1}{16}$-in. floating movement. Both nut and bracket are made of spring steel. The float assists in alignment of the nut and its mating bolt.

The nut itself is identical in outline and size to standard fixed anchor nuts of comparable thread size to permit interchange between the two. Nut sizes range from $\frac{5}{32}$ to ½-in. 28. Locking action is due to the elliptical heat-treated body that grips the bolt or screw when turned into position.

If you write maker identify as IEN-5714

BALANCING . . Free turning discs assembled in housings for static test

Source: CROWN INDUSTRIAL PRODUCTS CO.
407 Borden Ave., Sycamore, Ill.

List is $40 to $163

The company announces recent improvement in construction of its balancing ways for static test, previously described IEN-9597-45. Four sizes rate 400 to 5,000-lb. load, 10 to 60-in. swing, 12 to 48-in. maximum spread. The discs on which the work rides are made of case-hardened steel and are assembled on roller bearings. The two housings are tied together with rods that hold alignment and permit adjustment for spread.

If you write maker identify as IEN-5715

TESTING . . Hand operated machine for compression and tension springs

Source: CARLSON CO.
277 Broadway, Room 1302, New York 7, N. Y.

About $600

Load and deflection can be checked in relation to each other on compression springs to 12 in. in length and extension springs to 10 in., both to 4 in. in diameter, by this new hand-operated machine. Load is maximum at 300 pounds. The machine is equipped with a dial scale. It can be specified with a dial indicator also to read deflection in addition to the 12-in. steel rules provided for this purpose on the housing. Stops and tolerance markers are adjustable. Accuracy is within 0.25 per cent. The machine measures 14½ by 5 by 38 inches. Its load dial is 15 in. in diameter. Weight is 70 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5716

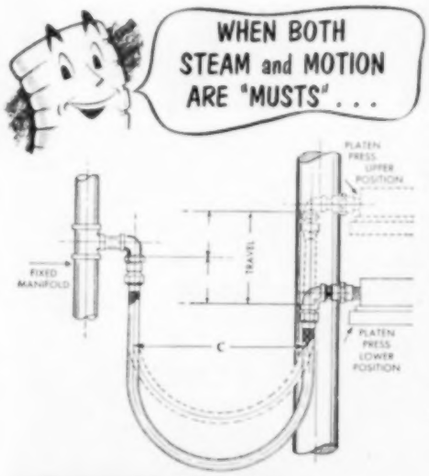
ARMSTRONG
Drop Forged
LATHE DOGS

ARMSTRONG Lathe Dogs give extra service because they are drop forged from selected open hearth steel and are heat treated to extreme toughness and stiffness. Hubs are made large enough to permit re-tapping, screws are also of special analysis steel and are hardened at the point to prevent upsetting. ARMSTRONG Dogs come in 10 types with square head or safety headless screws, with straight or bent tails. They are carried in stock by your local ARMSTRONG Distributor.

Write for catalog

ARMSTRONG BROS. TOOL CO.
5243 West Armstrong Ave.
Chicago 30, Illinois
New York and San Francisco

If you write maker identify as IEN-5717



Use Only
UNIVERSAL
Flexible
Steam
Connections

They're tough—flexible and economical. Widely used for movable platen presses, tire molds, laundry pressing machines and similar equipment requiring flexing many times per hour. Available in lengths to your specifications and equipped with heat-proof male and union female connectors as required.

Write for Catalog U-101 and data sheet showing proved method for installing Universal Seamless Flexible Metal Hose in vertical loops.

UNIVERSAL METAL HOSE CO.
2131 S. Kedzie Avenue Chicago 23, Illinois

If you write maker identify as IEN-5719

ALL PEERLESS MOTORS ARE "Peerless-Registered"

MORE than 90% of all Peerless Motors are custom manufactured to meet the specific operating requirements of the equipment with which they are to be used. So we "Peerless Register" every motor before shipment. The words "Peerless Registered" are a trademark, recorded in the U.S. Patent office. Only Peerless Motors can bear this phrase, and only Peerless Motors offer you this protection. This registration record is assurance to both you and your customer that the Peerless Motor has been properly designed for your equipment so as to give best possible performance and long, satisfactory service. And the registration record makes possible the quick identification of any Peerless Motor—anywhere.

THE PEERLESS ELECTRIC CO., WARREN, OHIO
Manufacturers of Quality Motors Since 1893
Single Phase • Polyphase • Direct Current • ¼ to 15 H.P.

Peerless-Electric MOTORS·FANS·BLOWERS

If you write maker identify as IEN-5720

Can be fitted into any area, at any height, to form a non-skid, self-cleaning, fireproof catwalk, walkway, or structural flooring "path" that gives quicker access to machinery. Permits free passage of light and air. Klemp Diamond Riveted Open Steel Grating comes pre-fabricated—cut to your specifications, ready to install. It contains more steel per square foot by weight... you can't find a stronger grating! Write today for our 24-page bulletin containing handy engineering data.

Ask about Klemp Hestoel heavy-duty surface armor.

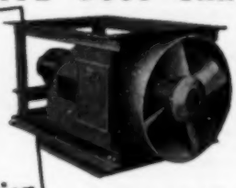
KLEMP METAL GRATING CORP.
Steel Flooring Specialists
8605 SO. MELVINA AVENUE • CHICAGO 38, ILLINOIS

If you write maker identify as IEN-5721

Wing

ELBOW TYPE DUCT FANS

Delivers Large Air Volumes with Low Power Consumption



Complete range of sizes from 10 in. to 60 in.; and from 200 to 85,000 c.f.m.

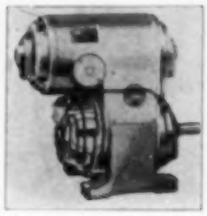
The Wingfoil Axial Flow Duct Fan, in either elbow type or straight line type, is a compact, economical fan designed to operate against static pressure. The elbow type replaces an elbow in a run of duct, with the motor outside the housing, unaffected by hot or dirty air or gases. Belt or direct drive. Wingfoil "Non-overloading" fan wheel characteristics. Write for bulletin.

L. J. Wing Mfg. Co. 180 Vreeland Mills Road, Linden, New Jersey

If you write maker identify as IEN-5722

DRIVE . . Variable speed unit, motor and V-belt transmission

Source: STERLING ELECTRIC MOTORS INC.
5399-03 Telegraph Road, Los Angeles 22, Calif.



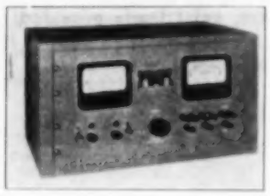
Note phantom motor

Base dimensions of this new assembly in the company's line of electric motor and adjustable V-belt transmission coincides size-for-size with the base dimensions of standard NEMA motors. Thus the drive can be put into the place of a standard motor without alteration in the driven equipment. The drive is available with single-phase motors ranging from 1 to 3 hp., polyphase motors from 1 to 15 hp. Speed variation is 2 to 1, 3 to 1 or 4 to 1. The motor can be specified in drip-proof, splash-proof and totally enclosed designs.

If you write maker identify as IEN-5723

TESTING . . DC. power supply, 100 to 500 ma., 200 to 1,000 volts

Source: PERKIN ENGINEERING CORP.
316-20 Kansas St., El Segundo, Calif.



Eight models are included in a new line of power supplies for laboratory use. Each has filament output at 6.3 volts and 3, 6 or 10 amperes. Bias rating is 0 to 150 volts or 0 to 300 volts at 5 milliamperes. Regulation is down to 0.5 per cent.

If you write maker identify as IEN-5724

METER . . Watthour instrument equipped with new cyclometer register

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Reads KWH.

New design of the company's single-phase watthour meter and certain of its polyphase instruments include a new cyclometer register known as Form 25. The register is interchangeable with previous designs so meters in the field can be equipped. It is featured by the large size of its figures and by its new magnetic action which does not release the figures until they are ready to move into full-view position in their individual windows.

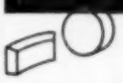
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5725

CAST SPECIAL SHAPES QUICKLY . . . EASILY

. . . with these FIRECRETE

Castable Refractories



Special shapes or linings of Firecrete air-harden and are ready for service within 24 hours. Other advantages—no drying shrinkage, negligible firing shrinkage, high resistance to spalling, can be used in combination.

3X Firecrete—Effectively withstands soaking temperature to a full 3000 F. Provides savings through longer life and reduced shutdowns.

H-T Firecrete—A high heat-duty refractory made from an exceptionally heat-resistant base. For service between 2400 F. and 2800 F.

Standard Firecrete—The most generally applicable type of Firecrete—for use to 2400 F. Permits casting shapes or linings as thin as 1½".

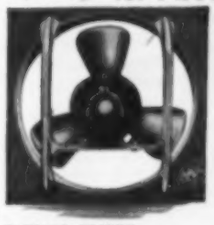
L-W Firecrete—A lightweight insulating refractory concrete for use to 2400 F. Has low conductivity, low heat storage capacity and high resistance to spalling.

For patching and gunning, use 3X BLAZECRETE. Has exceptional adherence qualities, can be flipped into place with a trowel without ramming or tamping. For use to 3000 F. For further information, write to Johns-Manville, Box 60, New York 16, N. Y.

JM

Johns-Manville FIRECRETE
"The Standard in Castables"

If you write maker identify as IEN-5726



BUFFALO BREEZO
Here's the fan you can install cheaply almost anywhere you need circulation. Low in first cost, Breezo Fans require no attention except lubrication. 5 sizes, 8" to 24" (up to 5500 cfm), all of rigid, strong, die-stamped square frames and properly shaped blades. Widely used for area or supplemental ventilation.

BUFFALO BELT-AIR
—extremely quiet, efficient propeller fans that save money in trouble-free performance as well as purchase price. In 24" to 48" sizes, handling up to 19,000 cfm. WRITE FOR BULLETIN 3222-F, which describes these and other "Buffalo" fans.

BUFFALO FORGE COMPANY
496 BROADWAY, BUFFALO, NEW YORK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Publishers of FAN ENGINEERING HANDBOOK
Sales Representatives in all Principal Cities

"Buffalo" DISK FANS

If you write maker identify as IEN-5727

Get RESULTS like this on Your DIE CASTING MACHINE!

LEFT
Casting as it come from machine.

RIGHT
Same casting plated without trimming, polishing or buffing.

RING automatic SHOT CONTROL
gives you the advantages of
2 STAGE INJECTION STROKE

Installed on zinc or aluminum die casting machines, this unit permits slow plunger movement through 1st stage of injection stroke . . . full pressure at 2nd or final stage of stroke. Turbulence and trapped air are minimized. Surface defects are avoided . . . higher density obtained. A proved, scientific method of producing better castings.

RING VALVE CO., Inc.
CLAWSON • MICH.
Telephone LIncoln 2-3387

LATEST TECHNICAL BULLETIN FREE ON REQUEST

If you write maker identify as IEN-5728

STANDARDIZE ON STANDARD
HALLOWELL
CABINET BENCHES

Finest all-steel construction, smooth, rigid working surfaces, free-sliding, carefully fitted doors, and roller bearing drawers make HALLOWELL Cabinet Benches outstanding. Simple, functional design blends perfectly with industrial interiors. Standard unit accessories permit you to *custom build* HALLOWELL Benches to your requirements. Write for descriptive literature. STANDARD PRESSED STEEL CO., Jenkintown 14, Penna.

HALLOWELL SHOP EQUIPMENT DIVISION **sps** JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-5729

MUELLER BRASS CO. ALLOYS FOR AVIATION'S TOUGHEST APPLICATIONS

803 • "803" metal is a high silicon iron copper bronze that is ideally suited for roller bearing cages and other specialty parts in jet aircraft. It is machinable and ductile. At temperatures up to 500° F., "803" is non-galling and retains its excellent mechanical properties.

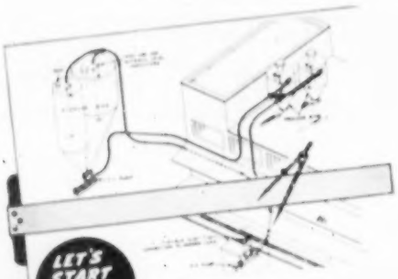
"600" SERIES • "600" series bearing bronzes contain no tin. They can be forged into relatively complicated shapes that require little or no machining. "600" series metals have a low coefficient of friction and a high tensile strength. They resist wear and corrosion, factors that make "600" series metals highly desirable for parts on hydraulic equipment, actuators and instruments in jet aircraft.

TUF-STUF • These aluminum bronze alloys are widely used for jet aircraft parts that really must stand up. TUF-STUF alloys are corrosion resistant, strong and light and long wearing. They resist oxidation even at high temperatures. TUF-STUF alloys are available as forgings, rods and screw machine parts.

82-8

MUELLER BRASS CO. PORT HURON 27, MICHIGAN

If you write maker identify as IEN-5730



LET'S START FROM SCRATCH

PROBLEM—Conveying.

SOLUTION—To design and build a system that will meet your requirements, better your operation

Fuller Company designs and manufactures four primary types of pneumatic conveying systems for dry pulverized and granular materials. This permits the selection of the system best adapted to specific requirements—best equipped to handle most efficiently the materials being conveyed.

Each job is considered separately. That's why we say "Let's start from scratch" . . . when the plant is in the design stage. Then a preliminary study of local conditions can be made—and the proper equipment and layout recommended by specialists in the field of pneumatic conveying. We strongly urge all prospective purchasers to avoid preliminary engineering and to permit us to submit a recommendation or engineering study.

Fuller has a tangible resource in a personnel with many years of experience in all phases of pneumatic conveying. Fuller engineers are at your service to make a study of your requirements and to make a recommendation. There is no obligation, of course.

GEFA

Fuller

FULLER COMPANY, Catasauqua, Pa.
320 S. La Salle St., Chicago 3
420 Chancery Building, San Francisco 4

If you write maker identify as IEN-5731

Foredom FLEXIBLE SHAFT MACHINES

PROVIDE MORE POWER —LONGER MOTOR LIFE

BECAUSE UNLIKE conventional type grinders MOTOR is NOT DWARFED to fit the hand!

YOU GET more precise control and unobstructed view of your work because of FOREDOM'S small-as-a-pencil handpiece which provides marvelous, effortless operating ease.

For Every "SMALL-WORK" Job of GRINDING and FINISHING

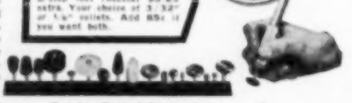
2-WAY USEABILITY — Hang it up on any convenient hook or suspend it from a shoulder strap.

ALL 3 DEPARTMENTS — Maintenance, Production, Tooling, can make profitable use of FOREDOMS. At their low cost, you can afford to spot them liberally about the plant for emergency and every day use.

Other heavier duty models, bench and hang-up types, with your choice of 5 quickly-interchangeable handpiece types at proportionately modest prices.

THE SECRET IS IN THE PENCIL SIZE HANDPIECE

MODEL 100 (illustrated) $17.75
6-step foot rheostat $5.25 extra. Your choice of 3-32" or ¼" collets. Add 85¢ if you want both.



★ *Quality Tested Since 1922* ★

See Your Industrial Supply Distributor—If He Cannot Supply You Write to Us

MAIL COUPON FOR CATALOG

FOREDOM ELEC. CO., Dept. N-4155
27 Park Place New York 7, N. Y.
Send your catalog No. N-4153

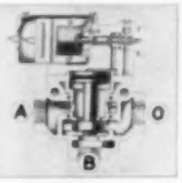
Name
Address
City & Zone State

If you write maker identify as IEN-5732

VALVE . . Two and three way design for pneumatic pilot pressure operation

Source: HANNIFIN CORP.
1108 S. Kilbourn Ave., Chicago 24, Ill.

Inlet	Exh.	Outlet	
A	B	O	3-way, n.c.
B	A	O	3-way, n.o.
A	B (Plugged)	O	2-way, n.c.
B	A (Plugged)	O	2-way, n.o.



One valve operates in any of four ways

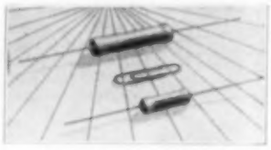
Please note particularly the illustration and tabulation accompanying this item to make correction for our error in IEN-3426-52. The tabulation and lettered line connections are now shown correctly to indicate flow directions and arrangement of the valve for normally-open, normally-closed, two and three-way action.

In each case operation is by a solenoid pilot valve mounted on the main valve body. It admits and releases the operating pressure on the piston in the central cartridge-type poppet assembly shown in the view to the right.

If you write maker identify as IEN-5733

RESISTOR . . Wire wound design, 5 and 10 watts, axial leads provided

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.



For electronic circuits

Axiohm trade names a new miniature power-type resistor available in 5 and 10-watt ratings. Resistance ranges from 1 to 10,000 ohms in the 5-watt size and from 1 to 50,000 ohms in the 10-watt unit. Body length is 1 and 1¾ inches. The leads extend 1½ in. from each end and are made of No. 20 B & S gage alloy wire, tinned ready for soldering. The leads are permanently anchored in place. The resistor is wire wound on a ceramic core and is covered with a vitreous enamel coating. The 5 and 10-watt ratings are both based on a 540-deg. F. hot-spot temperature in 104 deg. ambient.

If you write maker identify as IEN-5734

BATTERIES . . Keep them running with assistance of new maintenance check chart

Gould-National Batteries Inc.
465-69 Calhoun St., Trenton 7, N. J.

Wall chart, 22 by 17 inches, is offered on request to help you keep motive-power storage batteries in good operating condition. Sketches and concise suggestions are given on charging, cleaning, adding water, handling, record keeping. There is a check list of ten operations to perform at daily to yearly intervals. The new chart forms part of the company's "Plus-Performance Plan" of battery maintenance, previously reviewed IEN 7195-51.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5735

To— SIMPLIFY Temperature Control

11-K

Easy to Install

Install **POWERS No. 11** Self-Operating **INDICATING REGULATORS**

Reduce costs and get a better, more uniform product with the constant temperature maintained by this popular Powers Regulator. An easy to read 4" dial thermometer indicates temperature of process or operation under control. Prevents losses caused by OVER-heating. Saves steam and labor.

THE POWERS REGULATOR CO.
3437 Oakton St.
Skokie, Illinois

Offices in over 50 cities. See your phone book.
WRITE FOR BULLETIN 329

POWERS No. 11
TEMPERATURE INDICATING REGULATOR
Simple • Dependable • Economical

If you write maker identify as IEN-5736

"NO MORE LAMP PROBLEMS, thanks to the LUSTRA MAN,"

[says Potts-Farrington Company, Philadelphia]

"SIX MONTHS after installation, four or five fluorescent tubes used to burn out every day. The problem was really serious. Then your Lustra Man installed Lustra Fluorescents and not one has failed in over two years."

Your local Lustra Man can bring you new convenience, lowest overall lamp costs and greater efficiency through better lighting . . . with Lustra's complete quality line of Double Duty Lamps and Fluorescent Tubes. Write us and he'll arrange an appointment—Lustra Corporation, Dept. P-5, 36 Washington St., Brooklyn 1, New York.

Lustra

AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN-5737

Lepel *presents*

A *Low Cost* PORTABLE HIGH FREQUENCY *Induction* HEATING UNIT

This versatile unit is priced so low that every shop may now take advantage of modern induction heating techniques to improve quality and to increase production. Its simplicity of operation eliminates the need for skilled personnel.

The Lepel Model 2 KW will meet the requirements of machine shops, toolrooms, research laboratories and educational institutions. It is especially suitable for hardening, brazing and soldering small parts of either ferrous or non-ferrous metals.

Complete unit with line connection and load coil **$870.** f. o. b. factory

- **SMALL AND COMPACT** Conveniently operated on bench or table—no mounting necessary.
- **ECONOMICAL OPERATION** No special power installation required. Operates on 110 volts, 60 or 50 cycle line at unity power factor.
- **FULLY GUARANTEED** Guaranteed for continuous duty cycle and stated performance.

WILL HEAT TO 1500° F.

¼" steel rod 1" length in approx.	1 second
½"	2 seconds
¾"	15 seconds
1"	40 seconds
1½"	60 seconds

Will melt 4 ounces of brass or steel in 4 minutes. Equally well suited for heating of non-ferrous metals.

BRAZING Permits widest choice of silver or copper brazing alloys from lowest melting to highest melting points. Ideal for brazing carbide tips.

HARDENING Most localized, exactly where wanted at desired temperature. Ideal for gears, cams, bearing surfaces, cutting tools and other areas that are subject to wear.

SOLDERING Speedily and easily performs various soldering applications with or without the use of pre-formed rings.

ANNEALING Ideal for annealing, stress-relieving, normalizing or pre-heating selected areas.

MELTING Readily melts quantities of ferrous and non-ferrous metals in either graphite or ceramic crucibles.

Write for Lepel Catalog IN-5

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

If you write maker identify as IEN-5739

ONE for PLANT MAINTENANCE
for CRATING AND BOXING
for CONSTRUCTION WORK
for PATTERN SHOPS

DE WALT
is A COMPLETE power shop

A De Walt is a complete power shop in one machine. It saws at any angle, it dadoes, routs, shapes, tenons, grinds, sands, drills, and even does light metal cutting. For one small investment, in money and in floor space, you get the equivalent of a warehouse full of cutting equipment. Write for catalogue to De Walt Inc., Dept. E-5, Lancaster, Pa.

DE WALT
POWER SAWS
De Walt Inc., Lancaster, Penna. Subsidiary of American Machine & Foundry Co., New York

If you write maker identify as IEN-5740

IT'S HERE!
Grafo R-3
A Smokeless Colloidal Graphite
FORGING COMPOUND
that
Increases die life
Insures surface quality
Eliminates fire hazards
A WORKING SAMPLE SENT ON REQUEST

Other Grafo Colloidal Products Available For All Industrial Lubrication

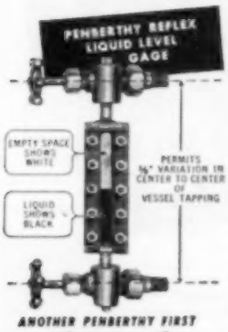
"Grafo" Colloidal Graphite may be obtained in water, petroleum oil, castor oil, in concentrated, semi-concentrated and ready-to-use mediums.

Write Us Regarding Your Special Application

GRAFO COLLOIDS CORPORATION
MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS
200 WILKES PLACE
SHARON, PENNSYLVANIA

If you write maker identify as IEN-5741

PENBERTHY
"Floating Shank"
Saves Time and Money in Gage installation



ANOTHER PENBERTHY FIRST

A feature available only on Penberthy drop forged steel (and alloy) gage valves, the "floating shank" automatically compensates for as much as 1/8" variation in the center-to-center distance of the vessel tapping. This saves time and cuts the cost of gage installation . . . eliminates stresses often induced during mounting. Penberthy "floating shank" is available at slight additional cost. It will pay you well to specify "floating shank" on your next gage order.

Ask for Catalog 35

PENBERTHY INJECTOR COMPANY
DIVISION OF THE BUFFALO-ECLIPSE CORPORATION
Established 1880 DETROIT 2, MICHIGAN Canadian Plant, Windsor, Ont.

If you write maker identify as IEN-5742

GRINDING . . Dresser attachment forms wheel to a magnified template

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.

Details in Circular 548

Model 4 designates new design of the company's Diaform wheel - dressing attachment. It is similar in design to the unit previously described IEN-6545-50. The new unit will handle wheels to 20 in. in diameter and provides a quick accurate means to true a given form to 3 in. in width and 1 in. in depth in one setting. It weighs 75 lb., has a steel-plate base and applies on a magnetic chuck mounted on the table of a horizontal-spindle surface grinder.

The mechanism is pantograph design with a tracer that the operator moves over a template secured to the vertical attachment face. This template can be cut by conventional means from steel plate to represent, for example, one-half of a complete punch and die outline. The mating outline can be cast from the steel half-outline for a perfect match. Guards prevent over-travel. The wheel can be dressed to produce accurate split dies, punches, flat forming tools from solid hardened-steel blanks, quickly and without major expense. The template is a magnified unit on ratio of 5 to 1 in the new assembly.

Three diamonds, rather than one as in the previous design, are mounted in tandem on the truing head. One is for roughing, one for semi-finishing and one for finished truing. The roughing diamond is a natural uncut stone. The other two are chisel shaped and precision ground to a 0.01-in. radius. A worn finishing diamond is ordinarily used for semi-finish truing to extend the accurate life of the finishing diamond. All three diamonds are positioned by means of a centering gage. The attachment is made in right-hand and left-hand models for use on machines with clockwise and counter clockwise wheel rotation.

If you write maker identify as IEN-5743

REFRIGERATING . . Sub-zero freezer to store aluminum parts in process

Source: GEORGE KOCH SONS INC.
2116 Pennsylvania St., Evansville 4, Ind.

The company announces availability of a new line of Zero Minus storage freezers to maintain a stock of heat-treated aluminum parts ready for use. The freezer is served by standard refrigerating equipment. It is built of wood with suitable insulation and can be equipped with doors and inspection openings as required. The door is surface mounted so ice will not form between it and the housing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-5744

FREED Instruments

1010 COMPARISON BRIDGE
Self contained—A.C. operated
Rapid and accurate test of Resistors, Condensers, Inductors.

1020B MEGOHMMETER
DIRECT READING
Self contained—A.C. operated
Electronically regulated supply
1 megohm to 2 million megohms

1110A INCREMENTAL INDUCTANCE BRIDGE
For accurate testing of communication and television components under load conditions.

1040 VACUUM TUBE VOLTMETER
Self contained — A.C. operated
High impedance—wide frequency
Used at Audio & Supersonic frequencies.

SEND FOR COMPLETE TRANSFORMER AND INSTRUMENT CATALOGS

FREED TRANSFORMER CO., INC.
INSTRUMENTS DIVISION
1732-B Wairfield Street, Brooklyn (Ridgewood) 27, N. Y.
EXPORT DIVISION
458 Broadway, N. Y. C. 13, N. Y.

If you write maker identify as IEN-5745

FOR THE DEFENSE
. . . of your machinery and equipment use a CLEMENTS-CADILLAC blower-suction cleaner to fight Dirt, Dust, and Grit. It routs these enemies effectively, quickly, economically.

Eligible under C. M. P. regulations.

SAVE
TIME · MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

CLEMENTS CADILLAC
PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN-5746

SLASH YOUR DRAFTING TIME with the OZALID PRINTMASTER!

• Here is America's Number One copying machine . . . recommended for all large-scale requirements. The Printmaster gives you low-cost, high-quality copies of your translucent originals in seconds—ready for instant use. Copies up to 42" wide (or 54", with the largest machine). Gives you a positive from a positive—and there are no messy water baths, no potash baths, no driers.

Cut Copying Costs . . . Use OZALID

Johnson City, New York.
A Division of General Aniline & Film Corporation.
"From Research to Reality."
Ozalid in Canada—Hughes Owens Co., Ltd., Montreal

If you write maker identify as IEN-5747

- one-piece, all-metal construction
- resilient locking sections
- controlled locking torques
- lock and stop nut in one
- not affected by temperatures to 550°F.
- can be used repeatedly
- every thread carries its share of load

Write for descriptive literature and samples. We'll be glad to supply you with a quantity for test purposes, although the Government has pre-empted almost all of our output. STANDARD PRESSED STEEL Co., Jenkintown 14, Pennsylvania.

FLEXLOC LOCKNUT DIVISION
SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-5748

Solve "small parts" assembly problems

• Assemble • Press
• Rivet • Stake
• Punch • Mark . . .

with ½ ton or 1 ton Han-D-Press the new Hannifin air-operated bench press.

Write HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Illinois

If you write maker identify as IEN-5749

IMMEDIATE DELIVERY

on RCA high-frequency

ELECTRONIC GENERATORS

for soldering, brazing, heat-treating

Available Today . . . NOW. For immediate shipment from RCA, Camden, N. J., direct to your plant. High-frequency electronic generators in sizes of 15 and 75 KW for induction heating of metals.

Big, sturdy high-power units. These generators are heavy-duty "work horses," built to stand up under long, tough production schedules. Time-tested designs. One-unit construction for compact, easy, space-saving installation. Built and backed up by RCA . . . pioneer in high-frequency heating. Nationwide service available through RCA Service Company.

Do you need applicators, too? RCA has developed dozens of different applicators for electronic heating. Ask us about our proved designs . . . chances are there is one already worked out to fit your needs.

Generator stock limited. Act NOW. Production of RCA electronic heating units is being stepped up to meet ever-increasing demand. But even so, the supply of completed units for immediate delivery is definitely limited. So if you need electronic heating equipment NOW . . . then NOW is the time to act.

Contact RCA at once. Get your order in fast. First come, first served. Do it NOW.

More Information? Mail Coupon TODAY

RCA Engineering Products Dept. 141-E, Camden, N. J.
Without obligation, please air-mail me complete information on your RCA electronic heating equipment *available for immediate delivery*, for the application stated below:

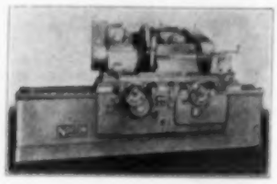
To be used for _____
KW power required _____
Name _____ Title _____
Company _____
Address _____
City _____ State _____

RADIO CORPORATION of AMERICA
CAMDEN, N.J. INDUSTRIAL EQUIPMENT SECTION

If you write maker identify as IEN-5751

GRINDING . . Cylindrical machine for light work, swing is to 18 inches

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.



Minimizes worker effort

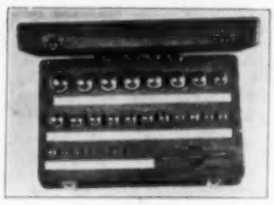
Type LCTU-18 is a new machine in the company's line of cylindrical grinding equipment with the major features of its previously developed 10-in. Type-CTU machine except that it provides 18 in. of swing capacity. It is available as a plain machine or as a semi-automatic and is built in work-length capacities of 18, 36, 48, 72, 96 and 120 inches.

Table traverse is by hydraulic power. A hand table-traverse mechanism is also provided. It disengages when the power traversing mechanism is engaged. Intended work is on tubular parts, disc-type parts and large pieces of low relative weight that require light grinding pressure and highly accurate finish in their specifications.

If you write maker identify as IEN-5752

GAGE . . Precision master balls for use in tool room and inspection

Source: INDUSTRIAL TECTONICS
3682-86 Jackson Road, Ann Arbor, Mich.



List is $33 and $65

Accuracy is within 0.00001 in. on the diameter and also for roundness in this new line of precision master balls. The units are suited for setting up comparators and other gaging equipment, for use in the tool room as masters and as measuring standards. They provide gage-block accuracy at nominal cost. Surface finish is 1 micro inch or better. Material is chrome-alloy steel hardened to 63-65 on the Rockwell C scale.

Set No. 16 contains 16 balls ranging from $\frac{1}{16}$ to 1 in. in diameter. Set No. 32 contains 31 balls in the same overall range but in $\frac{1}{32}$ rather than $\frac{1}{16}$ in. increments. Packaging is in a wood case as shown in the illustration.

If you write maker identify as IEN-5753

COMMUNICATING . . Microwave equipment and its use in industry are described in bulletin

Radio Corp. of America
1941 Front & Cooper Sts., Camden 2, N. J.

"What Is Microwave," title of new 20-page Bulletin MW, is answered by a condensed description of the equipment involved and examples of its industrial use. These range from remote control of pumping stations to standard message handling. One of the features described is remote meter reading and transmission by video microwave.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-5754

Another Application for TRENT "Folded-and-Formed" Heating Elements

Standard Racks in CANDY FURNACE

The efficiency of this Candy Furnace is due in large measure to the quick heating and reliable, trouble-free performance of the TRENT Patented "Folded-and-Formed" Heating Elements covering the bottom of the cooking chamber. Furnace is designed to hold Candy Pan at proper height above heating elements, and is equipped with three-heat switch. The furnace is adaptable to a wide variety of other uses, in the food-processing and chemical fields.
TRENT Standard or Custombuilt Heating Element Racks can solve your electric heating problems . . . efficiently and economically.

Write for recommendations.

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27, PA.

If you write maker identify as IEN-5755

ENAMELSTRIP

STEEL · ALUMINUM · BRASS · PRE-FINISHED COLOR COIL

assures a perfect finish

before fabricating

You can easily cut production time and cost with Enamelstrip, the continuous-feed, precolored metal coil. Leading manufacturers of metal products are using it with outstanding results in a wide variety of items. Enamelstrip's exclusive, flexible finish withstands the stresses of drawing, bending and forming without cracking or peeling. Many companies have entirely eliminated their finishing departments! Any metal in any finish will be coated and slit to your own specifications.

Write TODAY for detailed color bulletin.

THE COATED COIL CORPORATION
511 WEST 30TH STREET, NEW YORK 1 • LONGACRE 5-3161

If you write maker identify as IEN-5756

3-WAY FULL AREA, PACKLESS SOLENOID VALVES

PIPE SIZES: 1, 1¼, 1½ and 2 inches

We recommend this valve for controlling equipment where pressure must be alternately applied and exhausted as, for example, with diaphragm motor valves, air or hydraulic cylinders, etc. Classed as Bulletin 8351 ASCO Valves, here are a few specifications: maximum pressure 125 to 250 pounds; minimum pressure 10 to 20 pounds. Suitable for handling air, water, gas, oil and other non-corrosive gases or liquids up to 180°F.

Since the automatic control of any alternating application and release of pressure is so important for efficient operation, we suggest that you bring your problems to the attention of our engineers whose experience goes back nearly 40 years.

If you have recurrent and varying needs for automatic control valves, you should have our General Valve Catalog No. 23.

ASCO Solenoid VALVES

When in need of Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and Specialized Electromagnetic Controls, come to us.

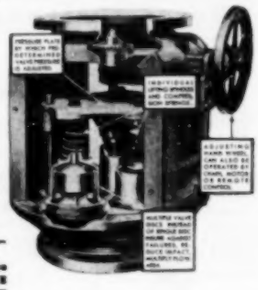
Automatic Switch Co.
383 LAKESIDE AVENUE • ORANGE, NEW JERSEY

If you write maker identify as IEN-5757

THE SAFE, TIGHT, QUIET MULTIPORT RELIEF VALVE

What Owners say about Cochrane MULTIPORT VALVES

"Twenty-five years of service. No other comment."
"Opened for inspection only once in 17 years."
"Opening and closing every 30 seconds with but little interruption for more than 12 years."
"This valve in service about 20 years with no maintenance."
"Savings cannot be computed. Absence of trouble is worth the price."
"No maintenance except change of springs for different pressure range after about 15 years."
"No breakdown, noticeable no expense."



Over 15,000 Cochrane Multiport Valves in Service NOT ONE KNOWN FAILURE

Cochrane Corporation
3152 N. 17th Street, Philadelphia 32, Pa.

Please send me a copy of Cochrane Publication 4150 on Cochrane Multiport Valve.

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 5758

AT LAST — A Powerful New BALE BREAKER

—that will take highly compressed bales of cotton linters and fluff up the material completely, will open bales of straw at the rate of 1000 lbs. a minute, will open bales of excelsior without breaking the fibres, and will operate successfully on many other products.

Saves time and hard manual labor. Does a job never accomplished before.

Write for 4-page illustrated folder with all the facts.

TAYLOR-STILES Company — CUTTING MACHINES & KNIVES

44 Bridge Street
Riegelsville New Jersey

If you write maker identify as IEN - 5759

NON-SINKABLE BOATS PROVE GPX EFFICIENCY!

Beauty, toughness, smoothness, low maintenance . . . these are the properties the Welin Boat Co. sought and found in GPX. Used for bulkheads, cockpit and cabin lining, hatches, and exterior paneling, GPX proved itself superior to any other material—regardless of cost.

GPX is a top-grade exterior Douglas Fir Plywood, bonded and surfaced with a layer of phenolic resin plastic under heat and pressure that makes the hard, dense surface part of the plywood itself.

CHECK THESE GPX PROPERTIES:

- ✓ WEATHERPROOF . . . unaffected by sun, rain, or freezing.
- ✓ WATERPROOF . . . 20 times more resistant to water absorption than ordinary plywood.
- ✓ ABRASION RESISTANT . . . 10 times as abrasion resistant as ordinary plywood in dry tests . . . 50 times when wet.
- ✓ CHEMICAL RESISTANT . . . resists hydrocarbons, salt, soap, oils, hydrochloric acid, sulphuric acid, organic solvents, etc.
- ✓ VERMIN RESISTANT . . . impervious to termites, marine borers, mold and fungi.
- ✓ SMOOTH AND STRONG . . . stronger than steel (weight for weight).
- ✓ EASY-TO-WORK . . . easy to saw, drill, sand, nail, rivet, glue or paint.
- ✓ VARIETY OF GRADES AND WEIGHTS . . . comes in 4 grades, 5 thicknesses. Standard panel size: 4 x 8 ft. Longer lengths on special order.

Get full details today!

GP GEORGIA—PACIFIC PLYWOOD COMPANY

614-5A North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Birmingham, Boston, Chicago, Columbia, Detroit, Lancaster, Louisville, Memphis, Nashville, Newark, New Hyde Park, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

For complete data, fill in and mail this coupon today

Georgia-Pacific Plywood Company
Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.
Please send me the GPX Use Folder.
NAME.....
FIRM NAME.....
.....
FIRM ADDRESS.....
CITY.....STATE.....
POSITION.....

If you write maker identify as IEN - 5761

AIR CONDITIONING . . Packaged unit, 15 and 20 ton, for scarce water areas

Source: TRANE CO.
2017 Cameron Ave., La Crosse, Wis.

Ask for Bulletin S-362-A

Unit assembly of a compressor section, a conditioner section and a section containing an evaporative condenser to minimize cooling water requirements make up this new all-weather air conditioner. The conditioner section encloses equipment for cooling, dehumidifying and circulating the air. It can be specified also for heating, filtering and humidifying to meet the needs of a given installation. Below this section is the company's multi-step reciprocating motor-driven compressor that steps down power consumption when demand for cooling is reduced.

The evaporative condenser section to the right of the other two, as the assembly is shown in the illustration, is arranged to employ moisture condensed from the atmosphere by the conditioner's cooling coil to supplement its own spray water. The arrangement conserves as much as 98 per cent of the water demand on humid days. Two circulating fans for the conditioner section are mounted above this section. In line with them and above the condenser is the fan for that section. Its drive is located outside of the section so it will not be subject to the moist conditions there.

Overall dimensions with rating at 15 ton are about 117 by 38 by 70 inches. The 20-ton assembly measures about 121 by 40 by 73 inches. Cooling coils and optional heating coils are the company's standard fin-and-tube construction with permanent solderless mechanical bonds. The centrifugal fans are balanced statistically and dynamically. Their speed is adjustable to meet varying duct resistance.

If you write maker identify as IEN - 5762

VENTILATING . . Motor driven blower circulates air in an equipment housing

Source: AMERICAN ELECTRIC MOTORS INC.
4809-13 Anaheim-Telegraph Rd., Los Angeles 22, Cal.

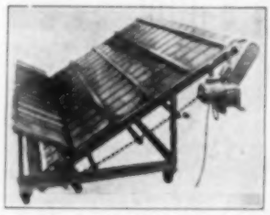
Available to order

New assembly of variable-frequency motor and centrifugal blower has been developed by the company particularly to circulate air in enclosures containing electronic equipment. The new unit applies particularly in aircraft where the power source is a generator that produces a widely varying current depending upon engine speed. Servo-type rotor and stator laminations are combined with large stator-frame diameter to minimize circulating rotor and stator currents. The new motor is suited for operation in an ambient temperature range between minus 65 and plus 65 deg. C. in intended service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 5763

Shear FASTER, SAFER, MORE ECONOMICALLY with FRIED STRIP HANDLING EQUIPMENT



FRIED Stripveyor* assures clean cut 100% shear efficiency . . . automatically picks up and carries strips beyond shear bed.

- Saves Labor—where two men previously required, now only one is needed.
- Promotes Safety—injury from material or moving parts of shear entirely wiped out.
- Easy to Install—can be ready for action in a matter of minutes—has floor locks and is portable!

—Can pay for Itself in Less than 100 working Days!

INVESTIGATE! Write for Bulletin giving complete facts and figures on entire line of FRIED Strip Handling Equipment.

To provide complete strip-handling convenience, Fried Stripveyor can be coupled to Fried Strip-Stacker. PATENTED*

FRIED STEEL EQUIPMENT MFG. CORP.
539 EAST 119TH ST., NEW YORK 35, N. Y.

If you write maker identify as IEN - 5764

STOP HYDROSTATIC PRESSURE LEAKS THROUGH CRACKS or HOLES IN UNDERGROUND WALLS with SEEP-SEAL

STOPS THE LEAK IN 2 MINUTES

Water seepage, even hydrostatic pressure leaks, commonly found in underground concrete structures, are no longer a difficult problem to overcome. A simple, quick and most effective remedy is found in Seep-Seal. This amazing new formula, mixed with Portland cement, and inserted in any crack or actual hole in concrete, will set within 2 MINUTES to shut off ALL leakage. Ideal for manholes, elevator pits, reservoirs, subways, mine-shafts and similar structures. Also widely used in plaster-consistency for damp-proofing floors and walls.

Write for complete details and prices today. Immediate shipments

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois

If you write maker identify as IEN - 5765

RAILS AND TRACK ACCESSORIES

Buy Rails and Track Accessories from a reliable single source—to save time and money. L. B. Foster's large warehousing operations provide dependable delivery of all your trackage needs—new installations or replacements. We'll meet your exact requirements. All material is rigidly inspected before shipment and is backed by Foster's Guarantee.

Write for Rails & Track Accessories Catalog 1E5

STEEL SHEET PILING • PIPE • WIRE ROPE

L.B. FOSTER CO.

PITTSBURGH 30, PA. NEW YORK 7, N.Y.
CHICAGO 4, ILL. HOUSTON 2, TEX.

If you write maker identify as IEN - 5766

DON'T LOSE VALUABLE DUST!

Buell's wide experience in the recovery of Valuable Dust can help you boost your plant's efficiency now—when peak efficiency is really needed!

To learn how a Valuable Dust Recovery System can be designed to suit your plant's special requirements, write today for full information on the *3 basic systems* of efficient dust recovery and dust collection. Ask for the new, illustrated Buell 'Dust Recovery' bulletin. Buell Engineering Co., Dept. 22-E, 70 Pine Street, New York 5, New York.

buell

Engineered Efficiency in Dust Collection

If you write maker identify as IEN-5767

DOUBLES THE LOAD... WITH HALF THE EFFORT

fmc CLAMP TRUCKS

Balanced design transfers load from operator to truck with a minimum of effort. Clamp jaws hold boxes firmly in place. Clamps are opened for release and closed for gripping with a convenient foot pedal. Free rolling, rubber-tired, ball-bearing, 9-inch wheels are mounted inside the frame.

We feature complete line of lock grip clamp trucks. For bulletins address Dept 11

FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION
Riverside, California · McAllen, Texas NM-7

If you write maker identify as IEN-5768

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

Dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN-5769

HARPER

Specialist in *all* Non-Corrosive Fastenings!

Call Harper *first!* America's largest producer of non-ferrous and stainless steel fastenings—specializing in bolts, screws, nuts, rivets, washers and accessories in brass, bronze, copper, aluminum, Monel, stainless steel—to solve your problems in corrosion, heat, abrasion and stress. Over 7,000 items stocked by warehouses and distributors from coast to coast.

FREE—*the 96-page Harper Price List and Stock Book.*

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
811 Lehigh Ave.
Morton Grove, Ill.
Rush Harper Price List and Stock Book.
Name.....
Address.....
City..... State.....

CALL HARPER FIRST!
for Bolts, Screws, Nuts, Rivets, Washers and Accessories in Brass, Bronze, Copper, Aluminum, Stainless Steel

If you write maker identify as IEN-5770

THREADING . . Roll type machine for Class 3 threads in mild steel

Source: BELL EQUIPMENT CO.
4437-41 Santa Fe Ave., Los Angeles 58, Calif.

Made in Japan

Type T-ROL-5D designates new thread-rolling machine with work capacity from 3/8 to 1 5/16 in. in diameter and thread length to 2 1/4 inches. Rolls can be mounted in the machine for thread pitch from 12 to 50. The machine has sufficient strength to roll material with maximum tensile strength at 142,200 lb. per square inch. Three motors are rated respectively at 2, 1 and 1/4 hp. Floor space measures 70 by 40 inches. Height is about 40 inches. Weight is 2,600 pounds.

If you write maker identify as IEN-5771

RELAY . . Hermetically sealed, double throw, 3 amp. on 110 volt ac.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Ask for Bulletin GEA-5729

The housing of this new Type-CR2791G relay is evacuated after the assembly has been completed and is vacuum baked to remove all traces of moisture. Then it is filled with dry nitrogen to a pressure of one atmosphere and is finally sealed. Thus the mechanism operates in its own atmosphere independent of conditions on the outside of the tin-plated drawn-steel housing. Contact fingers are made of beryllium copper. The contacts are silver. A glass-reinforced plastic compound is employed for stack insulation.

The design is 4-pole double-throw with contact rating at 3 amp. on 28-volt dc. or 110-volt ac. The relay will withstand instantaneous surge to 1,500 volts without failure. The operating coil is nominal at 24-volt dc. and maximum at 29 volts. Coil current is maximum at 104 amperes.

If you write maker identify as IEN-5772

PLASTIC MOLDING . . Beryllium copper cavities and their use as plastic molds are described in detail

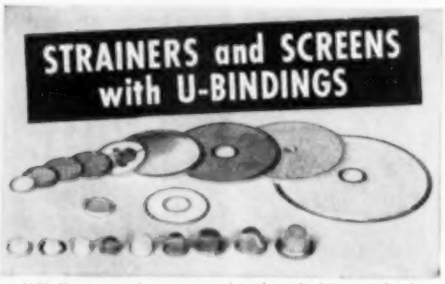
Manco Products Inc.
2403 Schaefer Road, Melvindale, Mich.

Reasons for the use of beryllium copper castings as plastic-molding cavities and cores are set forth by new 20-page "Tru-Cast" bulletin. They include properties of the alloy, advantages in service, machining data, welding and soldering, applications in injection and compression molding. Summary is given on facilities for producing these cavities.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5773

STRAINERS and SCREENS with U-BINDINGS



U-Bindings on strainers are seamless channel edgings made of sheet metal. They are of value for two reasons: (1) to finish the raw edges of the cloth; (2) to act as adaptor for further assembly. This construction involves extra tooling costs which are justified if the volume is large.

Michigan offers you wire cloth in any form to suit your needs—rolls, cut pieces, or fabricated. In any form you will benefit from Michigan's integrated facilities. Here the wire is drawn, the cloth woven, and the part fabricated in one continuous production line. Hence you are assured of uniform workmanship, economical production, and deliveries on schedule.

Send Michigan Your Inquiries

MICHIGAN WIRE CLOTH COMPANY
2075 Howard Street • Detroit 16, Michigan

If you write maker identify as IEN-5774

THROW 'EM AWAY!

When they're empty of course! Crystal-Clear . . . Fairway throw-away type salt tablet dispensers are now available in two sizes . . . the 500 tablet CRYSTAL and the 1,000 tablet CRYSTAL-M. Inexpensive . . . Neat and attractive for the office as well as factory, these transparent dispensers leave contents always visible.

Fairway throw-away types cost so little that a new unit is more economical than refilling. Simple to use . . . Easily installed Sanitary . . . Contents are sealed in at the factory.

Write today for STASAFE Bulletin No. 552

STANDARD SAFETY EQUIPMENT CO.
232 W. Ontario Street Chicago 10, Illinois

If you write maker identify as IEN-5775

STREAMLINER CONVEYOR SYSTEMS

SAVE TIME—MONEY—EFFORT

From punch press to assembler, these metal stampings are being conveyed by a "Streamliner" Horizontal Belt Conveyor. "Streamliner" Conveyors reduce handling costs, expedite materials through processing, storage and shipping areas. They give years of trouble-free service because they are engineered to plant and product. Write for descriptive literature.

HARRY J. FERGUSON COMPANY
125 WEST AVENUE, JENKINTOWN, PENNA.

If you write maker identify as IEN-5776

"AIR KING"

QUICK-ACTING, UNIVERSAL TYPE HOSE COUPLING

A strong, durable coupling for quick, tight connections on field or factory air hose. Plain design — no parts to get out of order or clogged with dirt. Made in hose ends and male and female threaded pipe ends. Completely interchangeable. Patented safety locking device is proof against vibration and rough handling. Malleable iron (rustproofed) or bronze.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS · NIPPLES · MENDERS · CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO · BIRMINGHAM · LOS ANGELES · HOUSTON

If you write motor identify as IEN - 5777

BILLMYRE
BLOWERS AND EXHAUSTERS

You can always be sure that no contamination can take place in a BILLMYRE Blower and Exhauster, since there's no internal lubrication.

- **TAILOR-MADE PRESSURE** . . . units to suit every gas or air pressure requirement, from ½ to 7-lbs.
- **LOW MAINTENANCE COST** . . . only one moving part, the rotating shaft-impeller assembly.
- **CONSTANT PRESSURE** . . . self-governing design eliminates controls, guarantees consistently even pressure.

Fifty years of air-moving experience lie behind the BILLMYRE name. Why not let our engineering staff help you solve your air or gas problems?

Write today for full information—descriptions, applications and specifications. Ask for Bulletin B-5. BILLMYRE Blower Division, Lamson Corporation, 462 Lamson St., Syracuse 1, N. Y. Offices in principal cities. Consult your Redbook.

LAMSON

If you write motor identify as IEN - 5778

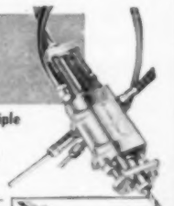
PRODUCTION UP
COSTS DOWN
WITH
Commander
PRODUCTION TOOLS

Adjustable
MULTI-DRILL

- **Adjustable To Any Hole Pattern**
- **Drill 2 to 8 Holes at 1 Stroke**
- **Fits Any Drill Press**

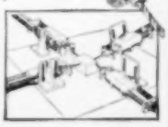
Increase production up to 800%—save time, cut costs. Mounted without alterations or special tools. 9" drilling area; centers to ½". Extension Spindles available to increase area to 22½". Special adaptations available.

MULTI-ANGLE DRILL UNIT



- **Quick, easy set-ups for Multiple Drilling of angle holes**
- **Complete Drilling Unit—Full 4" Stroke**

MULTI-ANGLE Drill Units provide unlimited freedom of set-up for long or short run multiple hole drilling jobs. May be mounted on fixtures, jigs or bolted to drill press table. Save time, cut costs on angle drilling. Used with any drill press or suitable power source.



DRILLING COOLANT TABLE

- **Complete Coolant System Contained in Precision Ground Drill Press Table**
- **1 to 8 nozzles . . . easily positioned**
- **Table always square with Spindle**

Drilling Coolant Table is complete with pump, motor, reservoir and nozzles . . . provides plenty of coolant where and when you want it. Leveling device assures squareness with spindle.

Write FOR CATALOG #851 and the name of your nearby Commander Distributor

Commander MFG. CO.
4219 W. KINZIE STREET
CHICAGO 24, ILLINOIS

If you write motor identify as IEN - 5780

TRUCKS . . Powered hand designs, high lift and low lift load platforms

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Hydraulic equipment is overload protected

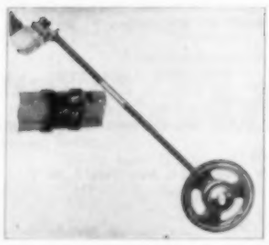
Two new assemblies have been added to the company's Worksaver line of powered hand trucks in which the operator walks beside the truck and controls its movements at the steering handle. The high-lift unit rates a 2-ton load. It has a lowered platform height of 6½ in. and will lift to a maximum of 126½ inches. The tow-lift heavy-duty unit, to the right in the illustration, rates 3¾ ton. Its platform lowers to within 11 in. of the floor from a 14-in. maximum elevation. The platform in this unit is 26½ in. in width. Standard platform length is 42 inches. Underclearance is 5 inches.

Both trucks are battery operated with two speeds in forward and reverse. Travel speed is at 2 mph. with a rated load. Lift movement for the high-lift assembly is at 14 fpm. with a rated load, 20 fpm. free. Lift movement is by a twin pump and motor. Platform width is 26 inches. It is standard at 48 in. in length. Overall truck width for the high-lift unit is 38 in. and 42 in. for two models measuring 68 and 83 in. in overall height with the platform in lowered position. The forward frame unit is articulated so the drive wheels will maintain contact with the floor in travel over ramps or uneven surfaces so the load is handled safely.

If you write motor identify as IEN - 5781

COUNTING . . Wheel type unit rolls to measure distance or length

Source: CEDERHOLM MFG. CO.
452 S. Worthington Road, Worthington, Mass.



Counts as it rolls

Aluminum wheel in this new Model-TR wheel-type counter is equipped with a rubber tire and is mounted on roller bearings. Its outer circumference measures exactly 3 feet. The wheel connects through the tube shaft to a counter at the operator's handle. The counter registers to 99,999. It can be reset to zero by turning a knob. Available with the unit is a bracket to attach to the rear of a vehicle when a count is to be made over a long distance. It clamps in place as shown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write motor identify as IEN - 5782

"DYNAMITE"
Armored, Insulated STEAM HOSE

For Greater Resistance to Temperatures, Pressures and Rough Use

STYLE 801. For pressures up to 150 lbs. Tube is special heat-resisting rubber compound, reinforced with continuous spiral of steel wire, and insulated by woven asbestos lining. Cannot buckle or collapse. Carcass consists of plies of selected cotton duck, bonded together by highly efficient adhesive. Cover is two-layer armor of braided wire, surrounded by half-round steel spiral. Sizes ⅛" to 3". Other styles for higher temperatures and pressures.

"MULCONROY *Starts* WHERE OTHERS *Stop!*"

MULCONROY COMPANY
Hose Specialties Since 1887
5327 JEFFERSON ST., PHILA. 31, PA.

If you write maker identify as IEN - 5783

KUSHION-TORQ
WHAT IT WILL DO FOR YOU

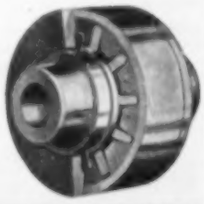
The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that causes wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever. It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.

Send for Bulletin No. 28-N.

Kanti-Lever Couplings

4,000,000 h.p. in Use

MFRS. OF SECTIONAL STOCK RACKS

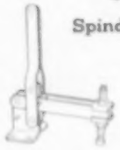


BROWN ENGINEERING CO.
122 NORTH 3rd ST. READING, PENNA.

If you write motor identify as IEN - 5784

Which Clamping Arrangement Suits You Best?

Spindle force at 90° to clamping bar



WITH CHANNEL BAR

The spindle assembly readily permits two-way adjustments—horizontal and vertical. Requires no welding or brazing.

Spindle force at other angles to bar

WITH CHANNEL BAR

The spindle assembly, held by a bolt bushing (furnished extra) between channel members of clamp, is brazed or welded at desired angle to meet specific clamping conditions. Spindle is adjustable for height.

WITH SOLID BAR

The spindle assembly consists of a U-shaped bolt retainer (furnished extra) which is welded or brazed to bar at any desired angle to meet your clamping requirements. Spindle is adjustable for height.

Bolt Bushings and Bolt Retainers available in sizes for most Knu-Vise models.

Sales offices in principal cities. Teletype DE 49.

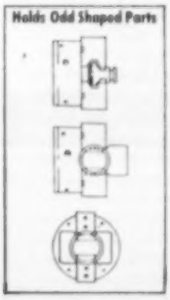
KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN

If you write motor identify as IEN - 5785

Buck ADJUST-TRU CHUCKS

NEW 2-JAW AVIATION CHUCK

Holds Odd Shaped Parts



THIS is the slickest way ever devised to hold irregular shaped parts for duplicate machining operations within .0005 precision.

The master jaws have *soft* top jaws which you machine to hold your specific work, then harden if you wish. That's not new. But the way the Adjust-Tru principle saves time on accurate rechucking is truly amazing. The jaws move in and out simultaneously to grip the work with a *single-pinion action*—just like any scroll chuck.

* *You make but one adjustment for precision when you start your run—then re-chuck with scroll chuck speed without further adjustment.*

Ask for a catalog with full details.

BUCK TOOL COMPANY
516 Schippers Lane
KALAMAZOO, MICHIGAN

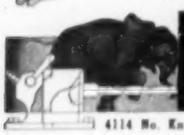
If you write maker identify as IEN-5786

SINGLE-ACTING *Air-Clamp**

Bore	STROKES Horizontal	Vertical
1"	1"	1"-2"
2¼"	1"-2"-3"	1"
3"		1"-2"
4"	2"-2¼"	3"
5"	3"	3"
6"	3"	2"

* Pneumatic Cylinders

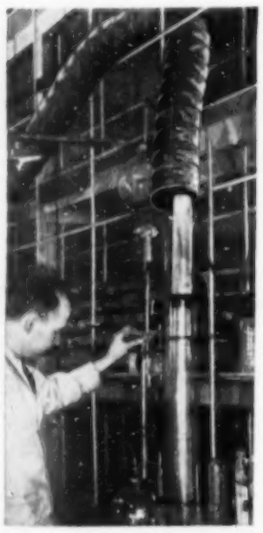
NEW CATALOG READY! Complete line of simple, adaptable, compact spring-return air cylinders. Cut costs and speed up production the modern, Air Power way. Write today.



MEAD SPECIALTIES COMPANY

4114 No. Knox Ave., Dept. EA-52, Chicago 41, Ill.

If you write maker identify as IEN-5787



Why move work around

TO GET TO PRESENT EXHAUST DUCTING?

Take SPIRATUBE® to the job!

With SPIRATUBE — the new-type flexible ducting — you can set up production lines where you want them without expensive changes in your dust or fume removal system. SPIRATUBE connects quickly, easily to your present lines — and bends anywhere with minimum crimping. No turn is too short, no angle too acute. No elbows or special fittings to bother with in going around obstructions.

Best of all, YOU CAN INSTALL SPIRATUBE YOURSELF! That cuts down-time, keeps your production line going. The initial cost of Spiratube is small . . . and its life equals — sometimes exceeds — rigid ducts.

Standard sizes for all requirements are immediately available from well-stocked distributors — coast-to-coast!

For all ducting systems:

SPIRATUBE® FLEXFLYTE® AYRTUBE®

Flexible Tubing CORPORATION

Guilford, Connecticut Pasadena 1, California

FREE! Full details on this amazing, cost-saving ducting. Fill in coupon and mail.

Please send me your new catalog on Flexible Tubing products.

My application is _____

Name _____

Title _____

Company _____

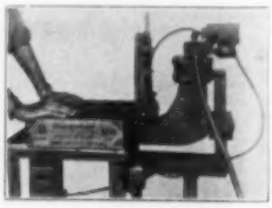
Address _____

City _____ State _____ IEN-1

If you write maker identify as IEN-5789

STAPLING . . Air operated machine drives upon pressing work against head

Source: INTERNATIONAL STAPLE & MACHINE CO. 803 E. Herrin St., Herrin, Ill.



List is $575

Model TH1-HAS is a new assembly of the company's retractable-anvil carton stapling machine. It is designed particularly to close the ends on long narrow cartons of either the overlap or slotted type. It is mounted on a flat-top stainless-steel table measuring 16 by 16 by 32 inches. It operates when the filled carton is pressed against the head to actuate a switch leading to the pneumatic control.

The machine can be adjusted for concealed stapling so the staple penetrates about ¾ of the way through the carton wall and is clinched. Cartons closed on the machine meet requirements of the Consolidated Freight Classification. They also have approval of the Post Office Department.

If you write maker identify as IEN-5790

DRIVE . . Flexible shafts, ¼ to 1¼ in. core, rate to 14 hp.

Source: ELLIOTT MFG. CO. 516 Prospect Ave., Binghamton, N. Y.

Illustrated data in Bulletin 210

Econoflex trade names the company's new line of flexible shafts for application in a variety of drives requiring flexibility and correction for misalignment. The line contains 180 standard units in core diameters from ¼ to 1¼ in. and length from 2½ to 12 feet. Two of the four size ranges are known as Drill Shaft with core diameter at ¼ in., Light Duty with a ⅜-in. core. Lengths are 2½ to 4 feet. Power rating is nominal.

Medium Duty is in six core diameters from 5/16 to ⅝ in., length from 5 to 7 ft. and power rating at ¼ to 1½ hp. at 1,725 rpm. This size can be operated at speeds to 7,000 rpm. for the smallest, 4,100 rpm. for the largest. The Heavy Duty design is in ½ to 1¼-in. core diameters, 4 to 12-ft. length and rates 1½ to 14 hp. at 1,000 rpm. Each includes the required end fittings ready for installation.

If you write maker identify as IEN-5791

GAGE . . Micrometer reads in 0.0001 in. divisions to 1 inch

Source: TECHNO EXPORTS 15 Whitehall St., Room 612, New York 4, N. Y.

Made in Germany

Ratchet action to control pressure between work and anvil, chromium-plated satin finish and a thimble measuring 0.650 in. in diameter characterize the new imported micrometer. The readings can be set and locked by turning a knurled nut. The forged-steel frame carries a fractional-decimal table and is cut away back of the anvil to permit entry for measuring into confined locations. The spindle thread is hardened and ground. Measuring faces are 0.268 in. in diameter. List price in a wood carrying case is about $15.

If you write maker identify as IEN-5792

GAGE . . Optical instrument to set angles, check surface flatness

Source: SAFE FLIGHT INSTRUMENT CORP. 6 Water St., White Plains, N. Y.

Ask for G-12 bulletin

Type G-12 Goniometer-Collimator is a new instrument in which an assembly of light source, target reticle, semi-transparent mirror, achromatic lens, measuring reticle and eyepiece are mounted to rotate on a precision graduated vernier dial above a base plate. When the light source, target reticle and lens are at exact right angles with the base the target centerline will coincide with the measuring centerline.

Any deviation on either side will displace the target line on the measuring field. At a distance of 1 in., a minute of arc represents a vertical displacement of 0.00029 inch. This is read after adjusting the instrument on the dial until the target line is centered. The reading then appears on the vernier.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN-5793

SELF-LUBRICATING Powdered Bronze Bearings To Your Designs

DUCTILOY powdered-bronze bearings are serving by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

Use is indicated wherever it is desired to provide bearings that will require virtually no lubrication or service attention—bearings accurate within thousandths, ready to drop or press into position — bearings for radial load or thrust or both, to intricate design if necessary.

May we quote to your prints

There's no obligation

NATIONAL MOLDED PRODUCTS, INC.

Manufacturers of

SINTRLOY - DUCTILOY - TUBELOY BEARINGS

1945 Mill Street St. Mary's, Pa.

If you write maker identify as IEN-5794

Here is the valve that revolutionized flow control of Sulphuric Acid...

HILLS-McCANNA Saunders Patent DIAPHRAGM VALVE with L-1 PLASTIC DIAPHRAGM

SULPHURIC ACID up to 66° Bé can now be valved without leakage, dripping or sticking—with this proved Hills-McCanna development. Available in sizes ½" thru 4"; handwheel operated, lever operated or in sliding stem models. Suitable for pressures up to 100 psi, temperatures up to 125° F. Write for full information. HILLS-McCANNA CO., 2347 W. Nelson St., Chicago 18, Ill.

HILLS-McCANNA CO.

saunders patent

diaphragm valves

Also manufacturers of — Proportioning Pumps

Force-Feed Lubricators • Magnesium Alloy Castings

If you write maker identify as IEN-5795

Do you have this valuable handbook?

This revised edition of the "Accurate Handbook of Technical Data on Springs" offers 40 pages of clear, concise data on such subjects as design formulation, load deflection and the proper methods of specifying springs. Also presented are several helpful short cuts for making spring calculations. Engineers and designers will find the handbook invaluable. Write for your free copy today!

ACCURATE SPRING MFG. CO.

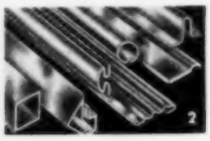
3807 W. Lake Street Chicago 24, Illinois

Accurate Springs

If you write maker identify as IEN-5796

Which of these do you use?

(1) ALUMINUM EXTRUSIONS
(2) ROLL-FORMED SHAPES



It's so easy to make WERNER facilities a dependable part of your own production lines.

Simply tell us whether your interest is in ALUMINUM EXTRUSIONS or in ROLL-FORMED shapes of *aluminum, stainless steel, brass, zinc, copper.* You will receive immediately specific, well-illustrated information covering your inquiry—and detailing WERNER capacity for *secondary operations.*

Two strategically located WERNER high-capacity plants are now serving nationally known top companies.*

From WERNER—you'll get highly personalized attention and *service.* Write Dept. IEN for bulletins. *Names on request.

Manufacturers - Basic Aluminum Extrusions and Roll-formed Products

THE WERNER CO. INC. ALUMINUM

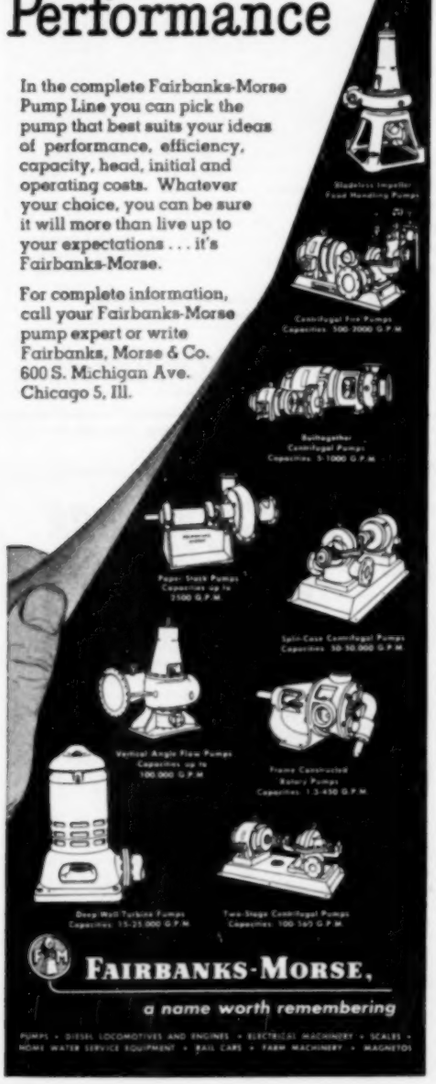
291 FIFTH AVENUE, NEW YORK 16, N.Y. • FACTORIES: GREENVILLE, PA. • OSHAWA, ONT., CANADA

If you write maker identify as IEN-5797

Take Your Pick of Performance

In the complete Fairbanks-Morse Pump Line you can pick the pump that best suits your ideas of performance, efficiency, capacity, head, initial and operating costs. Whatever your choice, you can be sure it will more than live up to your expectations . . . it's Fairbanks-Morse.

For complete information, call your Fairbanks-Morse pump expert or write Fairbanks, Morse & Co. 600 S. Michigan Ave. Chicago 5, Ill.



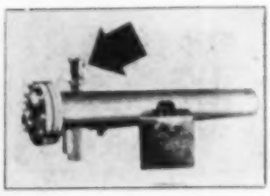
FAIRBANKS-MORSE,
a name worth remembering

PUMPS • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • SCALES • HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY • MAGNETOS

If you write maker identify as IEN-5799

HEATING . . Tubular exchanger with safety control for fuel oil

Source: DAVIS ENGINEERING CORP.
1058 E. Grand St., Elizabeth 4, N. J.



Details in Bulletin 60-K

Paraprobe trade names a new electrical resistance unit now available with the company's shell-and-tube fuel-oil heater for boiler installation. The new assembly acts through a relay, in the event of an oil leak in the heater, to sound a warning signal and to shut down the oil burner on the boiler. This is accomplished by a collection of oil on a probe in the water passage which increases resistance in the probe circuit and actuates the external relay.

The relay actuates a signal light on the relay housing, sounds an audible signal also and opens the burner motor circuit. A low water line condition that leaves the probe exposed for an appreciable length of time will produce the same result to signal this condition.

If you write maker identify as IEN-5800

TRUCK . . Two wheel hand unit, magnesium frame, stair climb runners

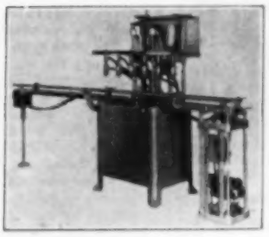
Source: MAGLINE INC.
1930 Mercer St., Pinconning, Mich.

Weight is 16 lb. for this new truck. Load capacity is 450 pounds. It is equipped with removable runners back of and between the wheels so a load can be skidded up or down a flight of stairs. The magnesium frame parts have been standardized for quick inexpensive replacement in the event of damage in service. Designation is 12-A-800-SC.

If you write maker identify as IEN-5801

PACKAGING . . Filling machine handles liquid material by gravity

Source: MRM CO.
189-93 Berry St., Brooklyn 11, N. Y.



Controlled at single lever

Hot or cold fluids can be delivered into containers ranging in size from fractional ounces to 2 gal. with this new machine. It will handle materials that tend to foam by lowering the supply tank to a point where very little pressure is exerted. Flow is through spouts made of two sleeves without packing that can clog or contaminate the fluid. Construction includes a 10-ft. motor-driven conveyor. Four available models mount 6 to 12 spouts. Dimensions are about 12 by 3 by 6 feet.

If you write maker identify as IEN-5802

PLATING . . Self-contained machine for chromium plating, mounts on bench

Source: CRO-PLATE CO.
800 Windsor St., Hartford 5, Conn.

Cannot be overloaded

Cro-Plater "100" is a new small bench-mounting assembly of the company's chromium-plating equipment, previously described IEN-5900-51. It can be employed to hard face cutting tools, gages, dies, molds, machine parts subject to wear. It can salvage undersized work by plating it back to a required dimension. The unit occupies a space measuring 2 by 3 feet. Its tank is made of lead-lined Armco iron. The tank is heated by removable electric elements. The power unit connects to an ac. input line to provide dc. to 100 amp. at 0 to 12 volts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

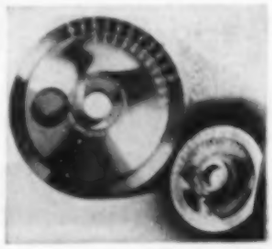
If you write maker identify as IEN-5803

NEW! ANDERSON SPEEDI-BALANCER

ADJUSTABLE BALANCING DISC for Grinding or Polishing Wheels

2 SIZES

No. 10 to fit arbors from ½" to ¾"
No. 15 to fit arbors from 1" to 1¼"



- Speedi-Balancer replaces collar on one side of grinding wheel.
- Compensates for "out of balance" by simple setting arrangement.
- Fast balancing of all types of grinding and polishing wheels.
- Ideal for pre-setting balance of wheels in stock.
- Easily removed for use on other wheels of similar arbor sizes.
- For arbor sizes ½" to ⅞" and from 1" to 1¼".

Specify exact size of shaft hole when ordering

No. 10—$8.50 each No. 15—$13.70 each

. . . also BALANCING WAYS in 5 sizes—20" to 96" swing

WRITE FOR BULLETIN 6-35

Anderson Bros. Mfg. Co.

ANDERSON BROS. MFG. CO., ROCKFORD, ILL.

If you write maker identify as IEN-5804

BETTER POWER TRANSMISSION

Whenever you require a reduction in speed between any prime mover and a driven machine, there is a Foote Bros. drive exactly suited to your needs.

The Foote Bros. line includes horizontal and vertical drives in either helical gear or worm gear types. Also available are Foote Bros.-Louis Allis Gearmotors in single, double and triple reductions. Call your Foote Bros. representative or write for information.

SEND FOR BULLETINS

HGA { Horizontal Worm Drives / Vertical Worm Drives / Hytop Worm Drives
LPB Line-O-Power Straight Line Drives
MPB Maxi-Power Helical Drives
GMA Foote Bros.-Louis Allis Gearmotors

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Boulevard
Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as IEN-5805

79% Saving in Man-Hours BY THIS ELWELL-PARKER Truck

This E-P Clamp Truck moves 200 rolls of paper from Receiving Dock to Warehouse Storage in 10 man-hours. Previous manual methods took 48 man-hours to do the same job. Besides this big benefit, rolls can be stacked higher to save floor space. Paper spoilage is practically eliminated. The truck can carry and stack rolls either horizontally or vertically . . . Especially designed for handling paper rolls, these Elwell-Parker trucks can also transport many other cylindrical loads in varying diameters.

WRITE FOR NEW FOLDER ON THE ELWELL-PARKER ROLL CLAMP TRUCK

THE ELWELL-PARKER ELECTRIC COMPANY
4062 St. Clair Avenue • Cleveland 3, Ohio

If you write maker identify as IEN-5806

Now—Make More Copies at Lower Cost with Ozalid's Desk-Top OZAMATIC!

- The ideal machine for copying data sheets, reports, letters or drawings—anything typed, drawn or printed on translucent material!
- Top printing and developing speed of 10 feet per minute—as up to 1,000 letter-size copies per hour at a cost of less than 1½¢ each.
- Increases productivity of your larger Ozalid equipment—makes copies up to 16 in. wide, any length.

Remember—
All this in a streamlined, compact desk-top model!

Send for free, illustrated literature.

Cut Copying Costs . . . Use OZALID

Johnson City, New York.
A Division of General Aniline & Film Corp. "From Research to Reality".
Ozalid in Canada—Hughes Owens Co., Ltd., Montreal

If you write maker identify as IEN-5807

HEAT When and Where You Want It . . . WATLOW CARTRIDGE UNITS

For a highly concentrated, self-contained mass of heat.

Application—For heating metal parts by insertion into drilled and reamed holes. Sealed ends available, permit use for immersion purposes.
Construction—Nickel chromium resistor is wound on refractory core and embedded in high heat conductivity cement. Brass, steel, monel, or stainless steel sheaths.
Terminals—Rigid (several styles and sizes) or flexible (special lugs if desired).
Ratings—Densities 10-35 watts per sq. in.

WRITE for Watlow Electric Heating Units Catalog.

WATLOW Since 1922—Designers and Manufacturers of Electric Heating Units
ELECTRIC MFG. CO.
1370 FERGUSON AVE.
SAINT LOUIS 14, MO.

If you write maker identify as IEN-5808

Globe Loading Lift

Speeds Loading and Unloading

Trucks, trailers, railway cars, and cargo planes can be loaded faster and at lower cost with a Globe Loading Lift. What's more, material can be handled with less risk of damage to cargo or injury to workers.

The Globe Loading Lift is a simple elevating platform that eliminates the need for ramps, gangplanks, and "muscling" of cargoes. Platform recesses into floor or driveway in "down" position. Accurate control makes for easy flush-leveling to keep goods moving on an even plane.

GIVE YOUR BUSINESS A LIFT!

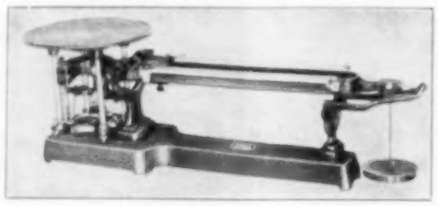
A Globe OILIFT will help you make the most of your manpower . . . speed production, save you money, help eliminate damage to materials and injury to workers. Write today for valuable information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc. Ask for Bulletin 18-456.

GLOBE HOIST COMPANY • 3000 E. Mermaid Lane, Phila. 18, Pa.
• Factories at Des Moines, Iowa, and Philadelphia, Pa.

If you write maker identify as IEN-5809

WEIGHING . . Solution scale rates to 20 kg. or 45 lb. net weight

Source: OHAUS SCALE CORP.
1046 Commerce Ave., Union, N. J.



Four models list at $93 to $137

Tool-steel vees in which tool-steel knife edges ride, in this recently improved Model 190 weighing scale, are assembled in floating arrangement to minimize friction and assure full knife-edge contact under all working conditions. The scale is built on a cast-iron base and has a cast-iron beam equipped with stainless-steel scales and slide bars.

A tare poise rides on one bar and permits setting the scale for net weight measurement of container-held solutions. The weighing platform is available in stainless steel as shown in the illustration. A box measuring 12 by 12 by 18 in. can be supplied to use with the new scale.

If you write maker identify as IEN-5810

CASTER . . Steel assembly, double ball race swivel, 1,400 pounds

Source: BASSICK CO.
435-9 Howard Ave., Bridgeport 2, Conn.

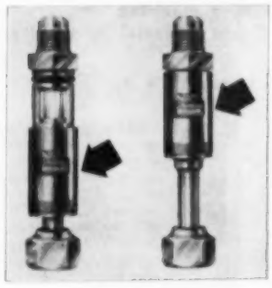
Please note our error

We were in error when we described company's Series-99 caster as "forged steel" in IEN-4355-52. Actually only one of the assemblies in the line has a 6-in. forged steel wheel. The fork and plate are steel but not forgings.

If you write maker identify as IEN-5811

SIGNALING . . Sight flow indicator mounts observation window in a tube

Source: MUELLER BRASS CO.
1923-27 Lapeer Ave., Port Huron, Mich.



Stays clear and clean

Quik-Sight trade names a new indicator fitting for assembly in a tube line to make the interior of the tube visible through a glass window. The glass cylinder forming the window is soldered in place in the brass body. It is covered and protected by a copper sleeve. This sleeve is moved axially to uncover the window. It is returned to protecting position where it seals on two rubber O-rings. The fitting was initially designed for use in a refrigerant line. It is made in ¼ and ⅜-in. sizes with length at 3⅝ and 4 inches.

If you write maker identify as IEN-5812

TRUCK . . Drum handling attachment clamps, lifts and rotates 55 gal. drum

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

It rocks the drum

New design of the company's hydraulically-operated fork carriage now includes a hydraulic cylinder with provision to rotate a pair of drum-carrying clamps through 90 degrees. A drum can be turned for vertical or horizontal stacking and can be tilted to 45 deg. below horizontal to empty it. The drum-handling unit slides into place on the truck forks where it is held by lock pins. A quickly detachable coupling is provided on hydraulic hose that supplies pressure from equipment on the truck for this purpose.

An accumulator chamber mounted on the tilting cylinder builds up pressure when a drum is tilted. This pressure is employed to return the drum to upright position. Clamp and tilt controls are mounted beside the operator so he need not leave his seat. Application can be made on the company's 1, 1½ and 2-ton fork trucks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5813

HAND HYDRAULIC PUMP

Single and Double Designs
To 20,000 P. S. I.

Interchangeable Pistons
⅛-½-¾ inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 cu. in.

Pressure range is 5,000 to 20,000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position.

WILLIAM S. PINE
1637 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN-5814

New LIQUID METERING DATA

Neptune Liquid Meters control quality and save ingredients

New meter data charts show how to select the right Neptune liquid meters for closer formula, inventory and cost control. Covers more than 100 industrial liquids, including cold, warm and hot water, oils, syrups, brines, soap solutions, and many chemicals. Also discusses automatic batching.

Send for Catalog 566-K1 Today!

NEPTUNE METER COMPANY
50 West 50th St., New York 20, N. Y.

Branch Offices
ATLANTA • BOSTON • CHICAGO • DALLAS
DENVER • NO. KANSAS CITY, MO.
LOS ANGELES • LOUISVILLE • PHILADELPHIA
PORTLAND, ORE. • SAN FRANCISCO

If you write maker identify as IEN-5815

NEW FEATURES... greater efficiency more economy in—

BUDA 2000 lb. FORK TRUCKS!

Look at the new Buda 2000 lb. capacity fork-lift trucks . . . compare them with any other . . . and you'll see why the new Budas are the big demand trucks today. For fast handling, operating economy and low maintenance—you can't beat them! See your nearby Buda Distributor today.

ENGINE and **HYDRAULIC SYSTEM** are completely accessible for servicing.
EASY OPERATING CONTROLS—two speeds forward—two speeds reverse operated by one lever.
Quick change heavy duty **CLUTCH.**
EXTRA STRENGTH, self-aligning Mast. Replaceable bronze wear strips.
CENTER POINT STEERING provides for equal turning both ways. Pivot type axle with spring cushioned stabilizer
CARRIAGE mounted on rollers with patented adjustable side thrust rollers, eliminating wear.
Full Front Vision **INSTRUMENT PANEL** with full complement of gauges and switches.
SAFE GASOLINE TANK located outside engine compartment and equipped with Protectoseal cap.

BM-34

Write for Bulletins and Specifications today.
The Buda Company, Harvey, Ill.
Manufacturers of Diesel Engines, Maintenance of Way Products, Jacks, Earth Drills and Material Handling Equipment

BUDA

If you write maker identify as IEN-5816

Complete Thompson Vinsynite-Vinyl finishing system used on this Uniflow Walk-In Cooler: Vinsynite pretreatment, Vinyl Aluminum intermediate coat, and Brown Lacquer finish coat.

ADHESION WAS THE PROBLEM . . . THAT VINSYNITE *Solved!*

Several years ago when the manufacturer of Uniflow Walk-In Coolers was dissatisfied with the adhesion of a finish to the heavy gauge steel exterior, he called upon us for a solution. Our recommendation of pre-treating with Vinsynite proved more than satisfactory. Vinsynite clings to the metal; the finish clings to the Vinsynite.

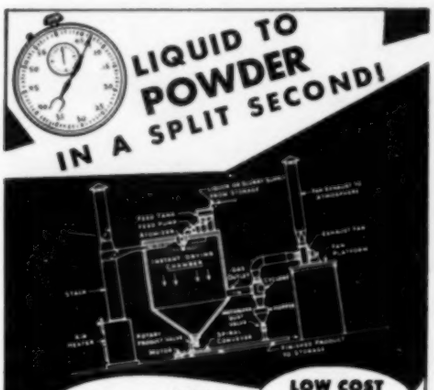
Vinsynite has many advantages for the numerous manufacturers who use it:

1. It eliminates the expense of time and labor consuming chemical pre-treatment.
2. It clings tight to any metal . . . can be applied like paint by spray, brush or dip.
3. Provides a bond-tight base for finish coat so that corrosion is shut-out and the finish will give years of durable service.

Vinsynite has many other advantages, discussed in detail in our Vinsynite Report. Write for your copy today.

THOMPSON & COMPANY
1086 John Street, Oakmont, Pa.

If you write maker identify as IEN-5817



FOR
CHEMICALS
FOOD PRODUCTS
SOAP POWDERS
CLAYS & CLAY SLIPS
PLASTICS
BY-PRODUCTS
WASTES

Instant Drying System Units are operating commercially on the drying of these materials. A large manufacturer of wall tile says their Instant Drying equipment "has produced . . . greater quantity . . . better quality . . . an economy of labor and an ultimate over-all cost reduction for the finished product."

LOW COST PRODUCTION DRYING

Write us about your drying problem. Arrange with us for test runs on your material at our Poughkeepsie plant.

INSTANT DRYING CORPORATION
104 East 41st Street, New York 17, N. Y.
Testing & Research Laboratories at Poughkeepsie, N.Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., N.Y.

If you write maker identify as IEN-5818

Precision Bore
GLASS TUBING

Accurate I.D. Tolerance

High Quality-Smooth Bore

TUBES for FLOWMETERS
fluted & tapered

MANOMETERS

Special Glassware fabricated from precision tubing.

CAPILLARY DOWN TO .005"

Quotations on Request

GEORGE E. FREDERICKS
Company
STATE AND ANNE STREETS
BETHAYRES
PENNSYLVANIA

If you write maker identify as IEN-5819

GRINDING . . Surface machine for steel slabs, rides a track

Source: MID-WEST ABRASIVE CO.
508-12 S. Washington St., Dept. A, Owosso, Mich.

To replace a swing grinder

The wheel head in this new hydraulically-reciprocated grinding machine mounts a 20 by 2½-in. abrasive wheel and a belt-connected 20-hp. motor. Hydraulic pressure controlled by the operator reciprocates the head at right angles to the track on which the machine is mounted for a grinding stroke measuring 42 in. in length. Wheel operation is about 10,500 fpm.

Vertical adjustment, also by hydraulic pressure is controlled at the operator's position as well as movement along the track installed in the floor. The machine will take a 24-in. wheel. It can also be specified at greater stroke than the standard 42 inches. Wheel pressure is regulated by a counterweight in the head assembly. The weight can be moved forward or toward the rear as required for a given job. The operator rides in comfortable seated position. The machine virtually eliminates danger of broken wheels.

If you write maker identify as IEN-5820

RECORD KEEPING . . Card file tray provides three margins of visibility

Source: VUE-FAX CORP.
90 Gold St., 4th Floor, New York 38, N. Y.

Cards tilt forward

Four tray sizes in the company's new Econofile tray-type card file measure 17 by 12 by 2 in., to 26 by 23 by 10 inches. They are designed for specified card sizes in a card-height range from 8 to 10 inches. In each case the cards present horizontal, vertical and diagonal margins of visibility for various record purposes. The tray has a margin-control spacer base and transparent plastic panels. It is made of steel finished in gray. The largest holds 8,000 cards.

If you write maker identify as IEN-5821

PACKAGING . . Locking bag holder handles 50 to 100 lb. multiwall bags

Source: RICHARDSON SCALE CO.
666-700 Van Houten Ave., Clifton, N. J.

For foods, chemicals, cement

Two brackets mount this new Cam-Grip bag holder on the outlet spout from a bin or hopper. Each bracket supports a pivoted cam. A semi-circular handle carries screws to bear upon rear cam shoulders. An empty bag is slipped over the mouth of the spout and up under the cams which then bear inward against the bag to hold it. Lifting the handle bar releases the cams and permits the filled bag to drop to a conveyor or skid. Complete assembly includes a cast iron spout on which the cam brackets are mounted. This spout secures to the user's hopper.

If you write maker identify as IEN-5822

HEATING . . Electric cabinet stores low hydrogen welding electrodes

Source: DESPATCH OVEN CO.
617-21 S. E. 8th St., Minneapolis 14, Minn.

Keeps the coating dry

Coated electrodes employed in low-hydrogen welding are stored in this new Model WRD-1 welding rod oven after they have been removed from their moisture-proof shipping containers and prior to their use in the arc-welding operation. The cabinet is electrically heated and is fitted with ten reinforced mesh compartments to hold 250 lb. of electrodes. The mesh construction permits circulation of heat and air inside the cabinet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-5823

EDWARDS SIGNALING EQUIPMENT

. . . via Graybar

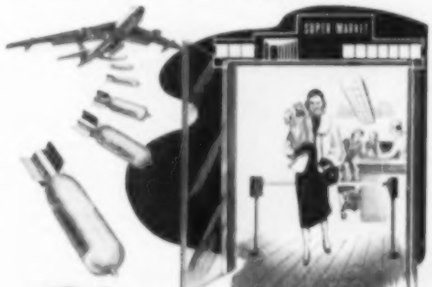
Edwards equipment offers easy maintenance . . . trouble-free service

Adaptabels. Simple and quick to install, the Edwards Adaptabel features a handy rear mounting plate to which all electrical connections are made. Mounted directly on walls, switch boxes, or outlet boxes, the entire installation can be tested and completed before painting and finishing. Later, it's an easy, non-electrical job to snap the desired Adaptabel into place over the mounting plate. Graybar-distributed Adaptabels are available in vibrating or single-stroke types for all A.C. and D.C. voltages . . . in sizes from 4" to 10".

Buzzers, horns, sirens and accessories. Graybar distributes the complete line of Edwards signaling equipment. All Underwriters' listed, you can get an Edwards system to meet any signaling requirement. Check with your local Graybar Representative, he'll be glad to furnish complete information. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 243-125

Call Graybar *first* for . . . *Everything Electrical* GraybaR

If you write maker identify as IEN-5824



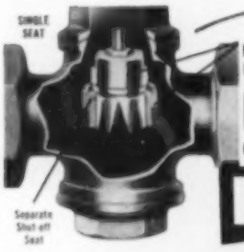
Relays By GUARDIAN
FOR SUPER BOMBERS OR SUPER MARKETS

Specified to guide super bombers to the target and release their bomb loads in a predetermined pattern, Guardian Relays invariably do the job as planned. The same accuracy and dependability applies when Guardian Relays work with photo-electric systems to count customers accurately and open traffic gates in supermarkets. Guardian control applications are practically unlimited because variations of all *basic type* Guardian Relays are quickly available from more than 15,000 standard Guardian control parts. We invite you to draw on this "bank" of standard control parts and solve your control problem within minutes instead of waiting weeks or even months. Write.

Series AR—3316—2 Relay

GUARDIAN ELECTRIC
1630-F W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN-5825



Easily Renewable Plug and Seat

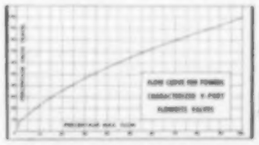
POWERS
CHARACTERIZED V-PORT
FLOWRITE VALVE

Gives Better Control with Less Maintenance

SPECIAL FLOW CHARACTERISTICS—High lift V-Port plug provides proportional flow throughout entire lift of stem as shown in chart below.

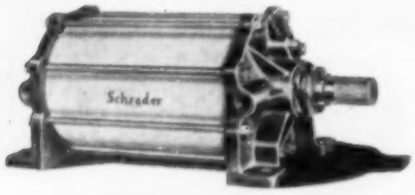
WIDE VARIETY OF SIZES—½" valve available with plugs to give 15%, 30%, 60% or 100% of maximum capacity. Easily interchangeable without removing valve from line.

SUPERIOR DESIGN of stainless steel plug and seat reduces wire drawing, insures longer life and tight shut-off. V-Ports do the throttling, protecting separate shut-off seat. Write for circular (a79).



THE POWERS REGULATOR CO., Skokie, Ill.

If you write maker identify as IEN - 5826



Packed with Low Cost Power

This compact, powerful Schrader Air Cylinder can eliminate costly mechanical movements . . . tiring, slow manual labor . . . space wasting mechanisms in many spots on your production machines. Leg mounted cylinders, shown here, will deliver a powerful push, pull, or push and pull, parallel to the mounting surface.

Cylinder action can be controlled manually or automatically. Speed, force and cycle time are all readily controlled by Schrader operating valves and accessories. Schrader cylinders are available in any type of mounting up to 8 inch bore in any stroke. Full details are in the Schrader catalog. Write for it today.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated

458 Vanderbilt Ave., Dept. D-34, Brooklyn 17, N. Y.

If you write maker identify as IEN - 5827

Chem-Board Tote Boxes HELP BUILD AIRCRAFT . . .

Many plants building the planes needed to make the nation strong keep materials, parts and sub-assemblies flowing to production lines in thousands of Convoy Chem-Board Tote Boxes. The nesting bases illustrated are stored in minimum space while awaiting new loads.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom made Nesting—Stacking—Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P. O. Station B, Box 216-1
CANTON 6, OHIO

If you write maker identify as IEN - 5828

Specify this oil seal to save space!

Clipper Seal's narrow flange sections permit minimum depths for oil seal cavities, thereby allowing engineers greater design freedom in the present trend toward more compact and efficient machines.

In addition to saving space, there are other important reasons why Clipper Seals are specified today:

(1) Their tough one-piece rigid heel and resilient inner lip retains oil with light but positive sealing contact, protecting bearings against grit, moisture and corrosive fumes.

(2) Both endless and split type seals, with specially designed garter springs, help speed assembly of precision parts—make maintenance quicker and easier.

If simplicity of design is your problem, then use Clipper Seals. They're available in a variety of lip designs for different bearing surfaces, to fit shafts of ¼" to 66" in diameter, and for temperatures to 450F. For more complete information, send for brochure PK-46A. Address: Johns-Manville, Box 60, New York 16, N. Y.

JM Johns-Manville CLIPPER SEALS

If you write maker identify as IEN - 5829

TRUCK . . Electric fork lift design, three sizes rate ½, ¾ and 1 ton

Source: LEWIS-SHEPARD PRODUCTS INC.
190 Walnut St., Dept. R-1, Watertown 72, Mass.

For general duty

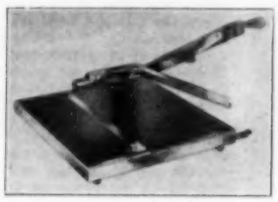
Travel speed has been increased from about 2 to 3 mph, with rated load in recently improved design of the company's Space-Master Model-J truck. Controls have been simplified to provide a brake and pedal accelerator for two speeds in each direction. Drive is by a traction-type series-wound motor through double reduction enclosed gearing. Three fork lengths measure 30, 36 and 42 inches. Wheel base measures 36 inches. Collapsed height is 83 inches. Maximum elevation for the load is 130 inches.

The truck can be turned in intersecting aisles measuring 96 in. in width when equipped with 36-in. forks. In load-carrying position the uprights tilt 10 deg. to the rear. They also can be tilted 2 deg. to the front to assist in loading and unloading. In addition to the 130-in. lift height the truck is also available for maximum lift to 106 and to 82 inches. In these two cases the collapsed height is 71 and 59 inches.

If you write maker identify as IEN - 5830

CUTTING . . Base mounted knife to gage and shear sheet materials

Source: HOBBS MFG. CO.
46 Salisbury St., Dept. N66, Worcester 5, Mass.



Knife stops against bumper

Five sizes rating 12 to 30 in. are included in the company's new table-model Jacques, Jr. hand-operated cutter. The assembly includes a metal base mounted on rubber feet, a spring-supported knife, a hold-down bar that operates ahead of the knife and an adjustable work gage that slides over a scale on the base. The spring prevents the knife from dropping accidently. The hold-down blade keeps the work flat and secure while the cut is being made. Cutting action bones the blade, keeps it sharp.

If you write maker identify as IEN - 5831

CONTROLS . . Float operated switch to regulate materials level in a bin

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway Ave., Aurora, Ill.

Limits filling and emptying

New design is announced by the company for its heavy-duty and explosion-proof assembly of its Tellevel bin-level control switches, previously described IEN-570-40. The new units are particularly for installation in hazardous areas involving the presence of explosive vapors and dust. The design is approved by Underwriters' Lab. for dust and vapors from materials such as ethyl ether, gasoline, alcohol, acetone, coal, grain, flour.

The heavy-duty design applies in installations handling coal, stone, ore in which lump sizes are ¾ in. or larger and shock contact with the operating float is likely. Each switch assembly is shipped ready for installation with a set of directions and with the leads coated to assist in correct wiring. The switch contacts rate 15 amp. on 110-volt ac., can be connected for normally-closed or normally-open operation.

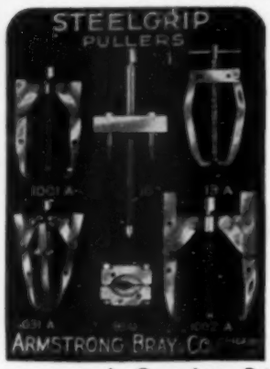
If you write maker identify as IEN - 5832

MANAGEMENT . . Keep your engineers informed urges new book that tells how to accomplish this

National Society of Professional Engineers
1119-23 15th St., N. W., Washington 5, D. C.

Relationship between industrial management and their engineers is the subject of new 48-page paper-bound book, "How to Improve Engineering-Management Communications." List price is $2. The book is the first in a series of executive research surveys by the Society. One chapter covers development of management potential in trained engineers. Final chapter presents recommendations.

If you write maker identify as IEN - 5833



The 6 most needed pullers

A Complete Package Unit . . .

These popular pullers come on a permanent steel tool rack. The sizes and type of STEELGRIP Gear, Wheel and Bearing Pullers most frequently needed in tool room, maintenance shop and garage are now packaged on this practical heavy gauge fitted steel board. With these drop forged quality tools, you can pull wheels, gears, pulley pinions and bearings off from shafts easily and quickly without battering or breakage.

Pullers are cadmium plated; board finished in deep blue "hammered finish" with gold trim.

Write for catalog of Standard and Special Wheel Pullers.

ARMSTRONG-BRAY & CO.
5380 Northwest Highway, Chicago 30, Illinois

If you write maker identify as IEN - 5834

NEWCOMER CARBIDE *Specialists* will gladly show you how to

WITH THE NEW GRADE **S-6** CUTTING CARBIDE

Highlights of the NEW S-6

S-6 Carbide is new and different — *industry-proven* on machining Armor plate, rough steel forgings and castings. Even though S-6 Carbide can be used at high machining speeds, its greatest tool life is obtained at speeds slower than those at which other grades of carbide can be successfully used. S-6 Carbide makes deeper cuts because it can be set for heavier feeds. S-6 Carbide, because of its extremely high strength, is excellent for interrupted cuts.

Write today for Catalog No. 108 which shows all other standard grades of Newcomer Carbides.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

If you write maker identify as IEN - 5835

NATIONAL PALLET SERVICE covers the country

WIRE, PHONE, WRITE FOR THIS NEW CATALOG

from { coast-to-coast / border-to-border

NATIONAL—the world's largest maker of standard or special job-engineered PALLETS is ready to serve you promptly. Our engineers are available anytime, anywhere to help solve your Pallet problem. Write, phone or wire today—without obligation, of course.

Representatives in all major markets from coast to coast.

NATIONAL PALLET CORP.
Main Offices: OLIVER BLDG., PITTSBURGH 22, PA.

If you write maker identify as IEN - 5836

SAND-O-FLEX
Finishes T-shaped tool handles

Above: Untouched photograph shows tool handles before and after they are finished with Sand-O-Flex contour sanders.

Left: Note how brushes force the abrasive cloth into the corner, thereby eliminating tedious hand methods.

Die-cast aluminum tool handles are deburred at full speed on a production line run at the JO Manufacturing Co., South Gate, California, Manufacturers of the J-O line of torque wrenches. Sharp flash that cut and slashed other abrasive tools is actually "wiped off" by following the irregular contour of the part with a Sand-O-Flex wheel. A smooth, all-over satin-brushed finish is obtained in the same operation.

If you've got a sanding or deburring problem on tricky contours, you need Sand-O-Flex. Four models — from light portable use to heavy-duty production line jobs. Write for free catalog and prices.

MERIT PRODUCTS, INC.
4023 Irving Place, Culver City, Calif.

If you write maker identify as IEN - 5837

MORE SOLD THAN ANY OTHERS
Write for Catalog
OF USES
AND SPECIFICATIONS

GENERAL
Industrial
Pneumatic Tires

..SAVE TIME·LABOR·MONEY
Protect equipment and floors · Reduce Breakage

★ Wide Base Wheel
★ More Air Volume
★ More Stability
★ More Load Capacity
★ Longer Miles in Hi-Speed Service

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

Rigid CASTER FORKS Swivel

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Send for Catalog • Dept. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

If you write maker identify as IEN - 5839

TRUCK . . Engine driven tractor rates drawbar pull at 3,500 pounds

Source: HENSEL GREEN & CO.
7-11 S. Clinton St., Chicago 6, Ill.

To push and pull

Model 35 is a new unit in the company's Unitow line of industrial tractors. It rates 3,500-lb. draw-bar capacity to pull a 70-ton load on a level floor. It is somewhat smaller than the 5,000-lb. Model 50, previously described IEN-8330-51, in both size and rating. Overall size is 102 by 53 inches. Turning radius is 118 inches.

Drive is by an International Harvester 6-cylinder gasoline engine rating 100 hp. at 3,600 rpm. A transmission provides four speeds forward between 3 and 19 mph. with one speed in reverse at 2½ mph. when the engine is operating at its standard governed speed of 2,400 rpm. Equipment subject to specification includes an all-weather cab, electric lights, snow plow, an arc-welding generator, a power winch rated at 20,000-lb. line pull, a rotary sweeper, broom, fire extinguishers.

If you write maker identify as IEN - 5840

STORING . . Steel cabinet with eighteen compartment drawers

Source: AURORA EQUIPMENT CO.
420-24 Cleveland St., Aurora, Ill.

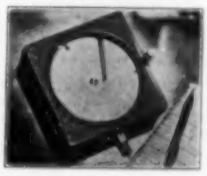
List is $44

The drawers in this new steel unit measure 5⅛ by 17 by 3⅛ inches. Each one is equipped with two dividers that are adjustable on 1-in. centers and with label holders for the front and the dividers. The steel housing can be stacked in multiples. Overall size is 34 by 18 by 14 inches. Finish is in green baked enamel. Designation is No. 22.

If you write maker identify as IEN - 5841

GAGE . . Pressure recorder, minimum range 0 to 10 in. of water

Source: DICKSON CO.
7424 S. Woodlawn Ave., Chicago 19, Ill.



Weight is 2 pounds

Bellows element, brass for liquids or gases of non-corrosive character, is employed in this new Type 3-B pressure recorder in the company's Minicorder line, previously described IEN-8529-49. A stainless-steel bellows can be specified. Connection to the pressure source is made at a ¼-in. pipe-threaded fitting at the bottom of the housing, which measures 5¼ by 2¼ by 5¼ inches. Minimum range is 0 to 10 in. of water. Maximum range that can be specified is 0 to 60 pounds. The element and mechanism are protected within the housing by rubber gaskets against entrance of dust, moisture. The chart is driven by a spring-wound clock.

If you write maker identify as IEN - 5842

PIPE . . Semi-flexible plastic for chemicals, oils, gasoline, water

Source: MUNRAY PRODUCTS INC.
12398-402 Crossburn Ave., Cleveland 11, Ohio

Competes with metal pipe

Cyclothene trade names a new line of extruded-plastic pipe for service in a temperature range between minus 50 and plus 150 deg. F. Sizes are ½ to 6 inches. Stock lengths are 25 ft. in 4-in. and larger, 150 ft. for 3-in., 250 ft. for 2-in., and to 400 ft. in the smaller sizes. Coils are supplied in the 3-in. sizes and smaller.

The pipe can be cut with a saw and connected with knurled and insert sleeves clamped with stainless-steel bands. A standard pipe-thread adapter is also available. Welded flanges can be specified in required lengths. Ells, tees and Y's can be fabricated as required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5843

CUT OFF TO ACCURATE LENGTH AND
Stop Scrap!

The MOTCH & MERRYWEATHER is the Way to That End

Triple-Chip Saw Blade

Segmental blade illustrated.

Don't be guilty of wasting metal. Cut off all shapes and sizes of ferrous and non-ferrous metals to accurate lengths. Segmental blades for large stock; solid blades for smaller. Let your local M. & M. dealer show the way to less waste.

Get bulletins from us or your local dealer.

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING · CLEVELAND 13, OHIO
COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

If you write maker identify as IEN - 5844

The Mercury Automatic Clutch
makes life easier for Electric Motors

Life has been a lot easier during the last ten years for electric motors lucky enough to be equipped with Mercury Automatic Clutches. Take starting, for instance. During the starting period, when the direct coupling of the power to the load is the least effective and the torque requirements the greatest, the Mercury Automatic Clutch automatically brings the maximum torque of the motor to the driven load. Then, when the load is up to speed, it transmits power at 100% efficiency. Overloads cannot stall the power source or slow it down below its efficient speed. Even a smaller motor equipped with a Mercury Automatic Clutch can often do a bigger job than a motor not so equipped. If you build equipment or machines powered by electric motors (or gasoline engines) investigate the Mercury Automatic Clutch. Ask for Catalog C-10.

APPLICATIONS

MERCURY CLUTCH DIVISION
AUTOMATIC STEEL PRODUCTS, INC.
CANTON 8, OHIO

If you write maker identify as IEN - 5845

If you write maker identify as IEN - 5846

Studebaker

HYDRAULIC

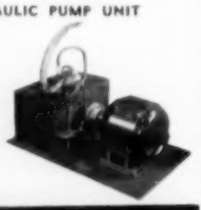
Production Equipment

SPEEDPRESS
MODEL 220G
MOTOR DRIVEN HYDRAULIC
GAP PRESS — 20 TON

Heavy, rugged gap-type frame makes this press especially adaptable for unwieldy jobs. Power stroke 10" per minute—retracting stroke 90" per minute. Adjustable stroke from ½" to 12". Sturdy hydraulic system driven by electric motor. Also available in 50 and 100 ton models. Specials to requirements.

MOTOR DRIVEN HYDRAULIC PUMP UNIT

Furnished complete, ready to connect through pipe or flexible hydraulic hose to hydraulic press or ram. Furnished separately for users own applications or for specially engineered jobs.



Send for bulletin No. 140 on Hydraulic Production Equipment

Studebaker MACHINE COMPANY
1235 S. 9th AVENUE, MAYWOOD, ILL.

If you write maker identify as IEN - 5847

MILLIONS

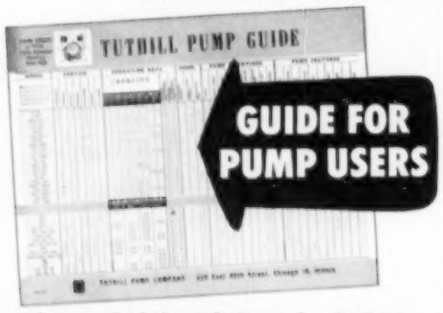
IN STOCK FOR IMMEDIATE DELIVERY

all popular sizes with nuts. Steel or brass, slotted or Phillips head. Maximum discounts.

Write—Wire—Or Phone!

STERLING BOLT CO.
307 WEST ERIE STREET • CHICAGO 10, ILLINOIS
Telephone: SUperior 7-3000 Teletype CG 488
Cincinnati, Indianapolis, Milwaukee, St. Louis

If you write maker identify as IEN - 5848



Helps you find the right Pump for the Purpose

As a practical help to pump users, Tuthill has developed a simple, easy-to-use reference sheet which gives all the facts you need to select the pump best suited for your requirements. This data includes types of service, pump models, capacities, pressures, speeds, packing, mountings—all features to give you the necessary details to select the exact pump for your purpose.

Write for your copy of this helpful guide today.

TUTHILL PUMP COMPANY
939 East 95th Street • Chicago 19, Illinois

If you write maker identify as IEN - 5849

WOODWORKING . . Portable saw with friction clutch in the drive

Source: PORTER-CABLE MACHINE CO.
1712-16 N. Salina St., Dept. PR-5, Syracuse 8, N. Y.

Cuts square or at angle

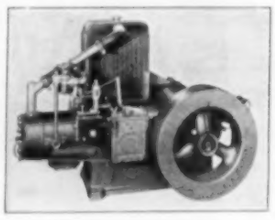
Kickproof designates new design in two sizes of the company's Speedmatic circular-blade portable saw in which a friction clutch is mounted between the motor and the blade. This clutch releases so the motor can continue to rotate if the blade is stalled by an obstruction or by binding in the cut. The result is elimination of dangerous kick-back to protect both the operator and the machine. The clutch employs porous discs manufactured by International Powdered Metallurgy Co. from powdered bronze impregnated with a special lubricant.

Model 507 mounts a 7½-in. blade, has 2½-in. cut-depth capacity. Model 508 takes an 8-in. blade and will cut to 2¾ in. in depth. Both machines are provided with a new depth adjustment that moves the saw up and down on dovetail ways on the base and locks it in desired position. A new safety guard minimizes the exposed portion of the blade. It remains free from chips and wet sawdust. It returns to position after it has been opened.

If you write maker identify as IEN - 5850

ENGINE . . Water cooled gas unit, 5 to 12½ hp. at 400 to 900 rpm.

Source: AJAX IRON WORKS
252 Castor St., Corry, Pa.



Ask for Bulletin 512

Model WL is a new 5 by 6½-in. gas engine of water-cooled wet-type cylinder-liner design. It provides a unit particularly for pumping duty in which the liner can be removed and replaced so oversized pistons and rings are not required for field servicing.

The enclosed lay-shaft operates at twice engine speed and carries a horizontal governor and enclosed lubricator drive on the cylinder end.

If you write maker identify as IEN - 5851

PIPE . . And the flow of fluids in it, also flow of gas in duct, described in textbook

Industrial Press
148 Lafayette St., New York 13, N. Y.

"Fluid Flow in Pipes" titles new book that summarizes theory on flow of fluids in pipe and gases in ducts, shows practical applications, describes formulas and calculations involved. The 128-page book, list price $3, covers dimensions of fluid properties, theory and measurement of viscosity, effect of piping on fluid flow, design practice.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5852

THE ANSWER TO YOUR ROOFING PROBLEMS

Here's a ready source of tested built-up roofing specifications to meet every need. Ruberoid makes every type of built-up roof — Smooth-Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, and smooth or gravel-and-slag surfaced Asphalt. You'll find them all in this handy booklet.

A leader in the built-up roofing field for almost 60 years, Ruberoid can supply you with materials and specifications for any roofing condition through Ruberoid Approved Roofers. You are assured of efficient, economical service because Ruberoid Roofers are not prejudiced in favor of any one type.

Equipment and merchandise need the lasting protection that always comes in a Ruberoid Bonded Roof. Costly losses might be avoided by giving your roofing a thorough check-up now. Write for Ruberoid's free Built-Up Roofing Specification Book and Roof Selector. The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.

The RUBEROID Co.
ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as IEN - 5853

DIE CAST IN ONE PIECE!

Gries eliminates costly manufacturing and assembly of 2 to 4 separate parts . . . and the savings are all yours! Independent tests prove zinc alloy gears often wear well, as they are to some degree self-lubricating. Integral one-piece assemblies can be made with shafts as well as center holes. ALL parts are produced to individual specifications. Gears available up to 1 5/16" outside diameter by 1/16" face width; wider faces as diameter decreases. Many gears, pinions, and combinations can be furnished without tooling charges from stock dies, there is a nominal charge for extra close precision requirements, and special designs.

Write TODAY for information about Gries standard components. Send specifications for prompt estimates.

America's Foremost Producer of Tiny Zinc Die Castings

GRIES REPRODUCER CORP.
797 E. 132nd St., New York 54 • Phone: MOtt Haven 5-7400

If you write maker identify as IEN - 5854

MERCURY SWITCHES by MERCOID

Assure Accuracy, Positive Operation and Long Life

TILTING TYPE MERCURY SWITCHES

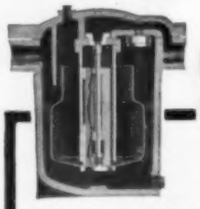
The original method consisting of a simple tilting movement for opening and closing the circuit is still largely the basis of operation in most mercury switch applications.

Figure 9-51 (illustrated—one of the most popular types) is a mercury to mercury contact switch. One electrode terminates in a pool of mercury within a cup of high temperature refractory material. The other electrode is submerged in the main body of mercury, and as the switch is tipped, these two pools of mercury join and close the circuit. Even when operated very slowly, the contact opens or closes with a positive and instantaneous action as the mercury joins or divides. The electric arc is confined to the lip of the high temperature refractory cup, so that no deterioration can occur.

Further information sent upon request.

THE MERCOID CORPORATION • 4217 BELMONT AVE. • CHICAGO, ILL.

If you write maker identify as IEN - 5855



ILLINOIS STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut—will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

Consult us on your requirements

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

If you write maker identify as IEN - 5856

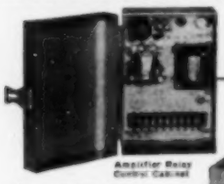
Is Production Control *Your* Problem?

solve it with

DE-TEC-TRONIC

PHOTOCELL EQUIPMENT

- Speed up production
- Increase accuracy
- Improve supervision
- Eliminate human error



Amplifier Relay Control Cabinet

Light source and photo cell units checked at point of operation. Light beam maintains constant watch over production.

Some of the most successful firms in the country have solved their production control problems with DE-TEC-TRONIC Photoelectric installations. Production has been speeded up, supervision has been improved, accuracy has been increased, human errors have been eliminated. DE-TEC-TRONIC equipment may save you thousands of dollars in your plant as it has in others by more efficient production and the elimination of waste and spoilage. The first cost is low and maintenance negligible. It can be installed by anyone.

Our new catalog gives you complete data on Amplifier Relays, light sources and photo cells with suggested applications to industry.

Write today for Catalog 106.

A Few Typical Uses

Counting . . . Predetermined cutting . . . Conveyor control . . . Die protection . . . Automatic weighing . . . Register control . . . Indexing . . . Measuring . . . Moulding control . . . Automatic packaging . . . Bottle Filling . . . Machinery safeguards . . . Selective counting.

DE-TEC-TRONIC LABORATORIES INC.

1711A Terra Cotta Pl. • Chicago 14, Illinois

If you write maker identify as IEN - 5857

THE FAMOUS MULTIFORM

BENDER CUTTER

Produces Without Special Tooling—Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade.

No. 5 AIR MODEL

FIVE-IN-ONE-TOOL—ALSO LARGER MODELS

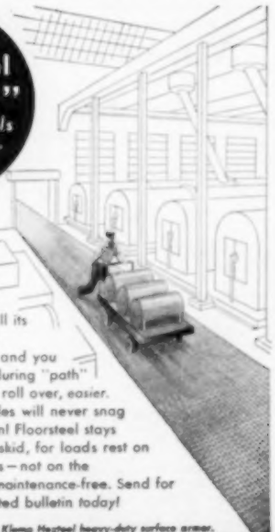
Hand Operated Models Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN - 5858

KLEMP Floorsteel "PATHS" make materials handling EASIER!



Roll flexible Floorsteel out like a rug over your present floor . . . fill its rugged steel grid with concrete or mastic . . . and you have a solid, level, enduring "path" that the heaviest loads roll over, easier. Cracks, ruts and potholes will never snag your truck wheels again! Floorsteel stays smooth, quiet and non-skid, for loads rest on its exposed steel edges—not on the concrete. Easy to lay, maintenance-free. Send for our informative, illustrated bulletin today!

Ask about Klemp Heatseal heavy-duty surface armor.

KLEMP METAL GRATING CORP.

Steel Flooring Specialists

6605 SO. MELVINA AVENUE • CHICAGO 38, ILLINOIS

If you write maker identify as IEN - 5859

CONTROL . . Electronic instrument with cam for time and temperature

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO. 4456 Wayne Ave., Philadelphia 44, Pa.

Records also on chart

New assembly of the company's Electronic circular-chart process controller and a motor-driven transparent cam assembly provides a means to control an industrial process according to a time-temperature schedule determined by the cam. This cam positions the instrument's control point in accordance with a pre-determined program as laid out on the cam outline. An adjustable switch assembly, operated by the cam, can be specified to de-energize the cam motor and shut the equipment down or operate signal lights or perform other electrical functions.

If you write maker identify as IEN - 5860

TUMBLING . . Paste concentrate for work finishing in a tumbling barrel

Source: BLUE MAGIC CHEMICAL SPECIALTIES CO. 2137 Margaret St., Philadelphia 24, Pa.

Free sample upon request

Finish appearance resembling a hand-buffed job is produced by using a new burnishing compound, No. 0-221, in connection with any cutting medium such as Alundum tumbling abrasive. Addition of the new material makes the abrasive a burnishing medium.

The material can be used in finishing brass, bronze, copper, gold, silver, steel and die-cast metals. It is used with two to five parts of water to one part of the concentrate in a tumbling barrel. It can be used repeatedly, its life depending upon the character of the work. Packaging is in 5-gal. containers and in 55-gal. drums.

If you write maker identify as IEN - 5861

DRYING . . Dehydrator cabinet recirculates air to dry photo films

Source: H. J. KAUFMAN CO. 13217 Roselawn Ave., Detroit 4, Mich.

List is $575

Motor-driven fan and chemical dehydrator are enclosed in a metal cabinet with space to hang up wet photographic and X-ray films. The assembly includes a timing mechanism that can be set to control operation of the fan for recirculation of dry air over and between the films. Moisture collects in a tank beneath the dehydrator for periodic emptying. Cabinet measures 36 by 18 by 72 inches. Space to hang film 32 by 16 by 24 inches. Fifteen drying racks are included.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 5862

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND, INC.

PRODUCTION CONTROL, 1952 —by men who have controlled production

This new booklet by Remington Rand offers you, *free*, first-hand experience in case-history form, by production men who are dealing successfully with today's complex manufacturing problems.

They find, as you have found, that to deliver the goods today sure-fire methods must be found to coordinate men, materials, machines. The simpler these methods, the better.

Whether your plant is large or small, you will want this book right at your elbow. There's not an ounce of theory in it—it's packed with down-to-earth know-how in your own language. For your free copy of X1268, write direct to the publisher, Remington Rand Inc., or use the Reader Service Form.

REMINGTON RAND INC.
Management Controls Library, Room 1094
315 FOURTH AVENUE, NEW YORK 10, N. Y.

If you write maker identify as IEN

Introducing VALVAIR'S NEW *Spring-Centered* NEUTRAL VALVES

STOP FAST . . . HOLD Double-acting Air Cylinders in ANY POSITION!

Valvair's new spring centered neutral valve is for air, hydraulic or vacuum service; for pressures up to 300 p. s. i. Sizes: ¼" through 1". Control assembly can be knob, lever, treadle, cylinder or solenoid.

Write for Bulletin KQ-5

VALVAIR CORPORATION, 949 Beardsley Ave., Akron 11, O.

Affiliate: Sinclair-Collins Valve Company

Rely Upon Valvair

If you write maker identify as IEN - 5864

Champ Hot Water Team!

JOHNSON

Heater plus steam

It's one of industry's favorite ways to heat water or process liquids of all sorts. Just hook up the Johnson "Instant" Heater to your high pressure steam lines; no reducers needed. Efficient design provides maximum contact between the water and steam-heated surfaces, transfers more heat more rapidly. Whatever your liquid heating job, get the Johnson money-savings facts.

Sizes for all needs; write for literature.

The Johnson Corporation

84F Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 5865

CAN YOUR FLOORS TAKE IT?

They CAN if you Use

STONHARD STONPACH

FOR REPAIRS TO CONCRETE FLOORS RUINED BY ACID, GREASE, OIL OR EXCESSIVE WATER

Rough, rutted floors can be quickly patched or completely resurfaced with STONHARD STONPACH. It resists chemical reaction and is extremely dense, even harder than concrete itself. At only ½ inch thickness STONHARD STONPACH will bond securely without shrinking. It is ready-mixed, you simply add water, and your own maintenance men can do the job. Ask about our trial offer plan. Mail the coupon below today.

STONHARD COMPANY

Building Maintenance Materials since 1922

102 Stonhard Building, 1306 Spring Garden St., Philadelphia 23, Pa.

Please send me your STONPACH folder: 102/S/52

Name .....

Company .....

Address .....

City ..... Zone ..... State .....

If you write maker identify as IEN - 5866

POSITIVE STOPPING AND HOLDING

Stopping and holding 1400 lbs. of compressed cartons for baling requires the positive, dependable action of a Stearns Magnetic Disc Brake on this baling press at the Blatz Brewery. In addition, this brake has the job of stopping and holding the baling platform at the bottom of the 40 ft. well. For stopping and holding, the answer is a Stearns Magnetic Disc Brake. Whatever your problem, be sure to investigate — write for Bulletin 604-E today.

A. C. or D. C. Magnetic Brakes for motor or machine mounting.

Foremost in the Magnetic Field

Stearns MAGNETIC INC.

626 South 28th Street • Milwaukee 46, Wisconsin

If you write maker identify as IEN - 5867

A PAID NEWS ADVERTISEMENT BY THE ALVEY-FERGUSON CO.

CONVEYING . . New concave roller conveyor, designed for cylindrical objects

No slipping — no sliding off

Shells and other cylindrical objects can be handled more efficiently by this new A-F Concave Roller Conveyor. It keeps objects in center of the conveyor line, prevents them from slipping to either side or sliding off as frequently happens when ordinary straight or flat type rollers are used. In most cases no guard rail is necessary, thus shells can be placed on or removed from the conveyor more quickly and easily than when they must be lifted over a guard rail.

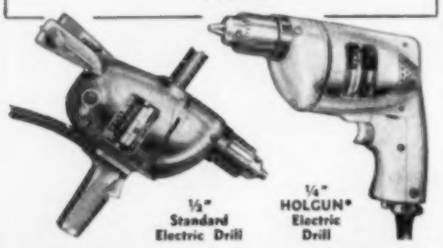
Made of No. 10 gauge steel tubing, the new A-F Concave Roller Conveyor is available with a 1/2" shaft for ordinary work, or a 11/16" shaft for heavy duty work — available with plain, dust-tight or grease-seal ball bearings. Width of roller is 4 5/8", for handling 3" shells and larger. The concave rollers can be furnished with Neoprene coverings, if desired, to prevent scratching and for complete protection of the objects moving along the line. Both straight and curved sections are available.

For latest information on modern, efficient handling methods for all types of products and materials, write

The Alvey-Ferguson Co., 341 Disney St., Cincinnati 9, Ohio

If you write maker identify as IEN - 5868

DRILLING PROBLEM?
Switch to
BLACK & DECKER
POWER



1/2" Standard Electric Drill

1/4" HOLGUN* Electric Drill

FOR drills to fit your needs, it pays to see your nearby Black & Decker Distributor *first!* You get an unmatched choice of Drill models — capacities from 1/4" to 1 1/4" — choice of handle arrangement — choice of speed, power and price in most capacities. And you get powerful Black & Decker-built motors, full ball-bearing construction, extra-tough parts, husky housings, perfect balance. Write for free catalog to: The Black & Decker Mfg. Co., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker PORTABLE ELECTRIC TOOLS

*Trade Mark Reg. U. S. Pat. Off.

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

HELP WANTED . . "I wish we had applications for a mechanical maintenance foreman, mechanical repair men, electrical repair men, instrument repair men, relay testers for employment in our new 625,000-kw. steam electric station located near Joppa, Illinois." **IEN W-42**

INDUSTRIAL ENGINEER . . "I wish I had contact with a company in need of a qualified industrial engineer with 8 years of experience for employment as assisstant to a production executive or in the industrial engineering department. I am at present in Ohio." **IEN W-43**

NEW PRODUCT . . "I wish I had a buyer for a patented saw set for circle saws. I have a working model, drawings and patterns and will send a picture on request. I am located in Allegany, N. Y." **IEN W-44**

NEW PRODUCT . . "I wish we had a consumer product, not over 2 ton in weight, that could be produced in our machine shop and assembly department. We would be interested in taking it over on a license agreement or outright sale to add to our present line of special machinery manufacture. We are located in Rhode Island." **IEN W-45**

POINTING MACHINE . . "I wish we had contact with any organization from which we can purchase a No. 6509 used or rebuilt Waterbury-Farrel automatic pinch pointing machine to point wood screws, drive screws to 1/4 in. in diameter. We want a machine complete as originally constructed by Waterbury-Farrel in condition ready to operate. We are located in Milford, Conn." **IEN W-46**

SURPLUS . . "I wish we had a buyer for a miniature canning retort made by Ford Machinery Corp. It has capacity for about 30 doz. cans. It tests to 30 lb. live steam pressure. It is complete with two crates, a pressure gage, thermometer and fittings. It is in New Bedford, Mass." **IEN W-47**

SURPLUS . . "I wish I had a buyer for approximately 30,000 pieces of phenolic fibre strips measuring 14 in. in length by 1 in. in width by 1/4 in. in thickness. The pieces are in Greentown, Ind. Sample is available." **IEN W-48**

SURPLUS . . "I wish I had a buyer for approximately a ton of Dow Chemical ethocel sheeting measuring 0.003 in. in thickness. It is in rolls measuring 11 in. in diameter by 4 in. in width. The stock is in Aurora, Illinois." **IEN W-49**

SURPLUS . . "I wish we had a buyer for 8,350 ft. of seamless carbon steel mechanical tubing, cold drawn, commercial quality, standard tolerances, annealed, Specification MT-1015 Navy inspected. The tube measures 5 1/8 in. in outside diameter. It has an 0.188-in. wall. It is in random lengths from 11 to 18 feet. It is in Holland, Michigan." **IEN W-52**

WEAR A BUDDY POPPY

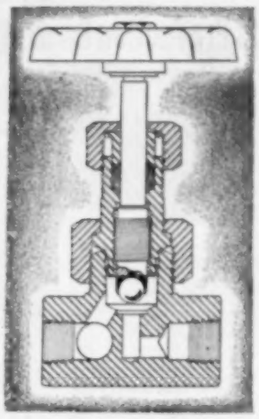
If you write maker identify as IEN - 5869

DeBothezat "Hy-V" Air Jets project a concentrated stream of cool air as far as 35 feet WITHOUT DUCTS. Models available for wall or floor mounting, with fan wheels 18" to 30" in diameter. Capacities up to 12,000 CFM. Send today for FREE CATALOG.

"Hy-V" Air Jets
DeBOTHEZAT FANS DIVISION
American Machine and Metals, Inc.
East Moline, Illinois

If you write maker identify as IEN - 5870

NEW! BALL VALVE for air lines, meter manifolds, pressure gauges, other services



Here's a radically-new forged steel valve that can't leak . . . practically never wears out . . . costs less than ordinary steel valves.

In place of a disc or plug, the new Foxboro Ball Valve has a retained, free-rolling stainless steel ball that exposes new surface to seat at every closing.

Foxboro Ball Valves handle pressures to 3000 psi. Available in straight-thru and angle types. Two or four connections to simplify piping. 1/4" size. Write for detailed folder. The Foxboro Company, 425 Neponset Avenue, Foxboro, Mass., U.S.A.

FOXBORO INSTRUMENTATION

If you write maker identify as IEN - 5871

How to measure a folding rule—

Compare a Stanley "Green End" with any other folding rule. See how much more real rule value there is in a rule that has "Green Ends". Famous Stanley "Zig-Zag", "Pull-Push" and Boxwood rules are available in a wide variety of styles, sizes and markings for every industrial need. Call your distributor.

Handy
Pocket-size. Opens as needed, up to 6'.

Greater Accuracy
"Ball-socket" action locks joints, prevents "stretching or jack-knifing".
Exceeds U. S. Govt. standards for accuracy.

Longer Wearing
Rust-resistant nickel silver joints — longest wearing of any folding rule.
New plastic coating on all sticks — wears four times longer.
Select rock maple sticks — tough and flexible.

Easier Reading
Large, black markings on white finish. Graduated in inches and 16ths all edges.

Stanley Tools, New Britain, Conn.

THE TOOL BOX OF THE WORLD STANLEY
Reg. U.S. Pat. Off.

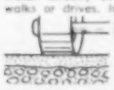
HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

If you write maker identify as IEN - 5872

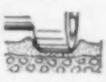
NEW FLOORS In 24 Hours

HARD MASTIC
BONDS PERFECTLY — NEVER COMES LOOSE
NO CHIPPING REQUIRED

Install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.



HEAVY DUTY • DUSTPROOF
WATERPROOF • RESTFUL
FIRE-RESISTANT • QUIET
SLIP PROOF • SANITARY



"PERMAFLEX" resurfaced areas will not rut under 3000 lbs. pressure per square inch.

Many users apply "PERMAFLEX" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

OLD MASTICS RUT and DENT under 300 lbs. per square inch.

The most severe trucking conditions in 1000 of the largest industrial plants show no destructive effect on "PERMAFLEX" after years of use. Every conceivable trucking condition was fully met.

AMAZING! UNBELIEVABLE! Until you try "PERMAFLEX"!

Users include U. S. Steel, General Motors, Chrysler, Remington Arms, General Electric, Westinghouse, Armour and leading railroads.

Test 100 square feet and be convinced. Write for literature and trial offer.

BRANCHES:—
Albany, N. Y.—3-1368
Atlanta—Main 4110
Baltimore—Belmont 2770
Chicago—Blue Isl. 4666
Cleveland—AL. 1-1601
Detroit—Tuxedo 5-8500
New York—Wis. 7-0474
Norfolk—2-9035
Rochester, N. Y.—Gen. 1988
St. Louis—Lucas 37700
San Francisco—Gar. 1-3196

INSTALL COMPLETE 15c per square foot

PERMAFLEX PRODUCTS COMPANY
1846 NORTH FRONT STREET, PHILA. 22, PA.